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OF THE

ENTOMOLOGICAL SOCIETY

OF

LONDON

FOR THE YEAR

1873.

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ERRATA.

Page 102, line 5 (from bottom), for "Movi," read "Mooi."
„ 103, line 11 (from bottom), for "Naryria," read "Narycia."
„ 104, line 5 (from bottom), for "Meneris," read "Mineus."
„ 107, note †, line 4, for "Umblanga," read "Umhlanga."
„ 109, line 20, for "Umblanga," read "Umhlanga."
„ 116, line 13, for "Murraysburgh," read "Murraysburg."
„ 116, line 17 (from bottom), for "*saggitate*," read "*sagittate*."
„ 116, line 3 (from bottom), for "Mushett," read "Muskett."
„ 117, line 10, for "*Aslanga*," read "*Aslauga*."
„ 118, line 16, for "*Aslanga*," read "*Aslauga*."
„ 119, lines 6, 7 and 17 (from bottom), for "*Mahozutza*," read "*Mohozutza*."
„ 120, line 14, for "Cylopides," read "Cyclopides."
„ 448, bottom line, for "*Cossonidius*," read "*Cossonideus*."
„ 471, line 25 (et passim), for "*Brazilia*," read "*Brasilia*."
„ 514 (note), line 3 (from bottom), for "fragrant," read "flagrant."

Proceedings. Page ii, line 24, for "erythrocephalus," read "erythrocephala."
„ „ line 10 (from bottom), for "*Lucciola*," read "*Luciola*."
„ xiv, line 13, for "testaceum," read "ferrugineum."
„ xv, line 3, for "W. F. Bassett," read "Homer F. Bassett."
„ xxvii, line 18, for "Cerastes," read "Cerastis."
„ xxxii, after line 2 (from bottom) add, "The following Officers for 1874 were subsequently elected:—President, Sir Sidney S. Saunders. Treasurer, Mr. R. M'Lachlan. Secretaries, Messrs. Grut and Verrall. Librarian, Mr. E. W. Janson.

"The President stated that the President elect, being unable to attend the next meeting, had requested him to nominate Professor Westwood, Mr. Stainton, and Mr. Dunning, as his Vice-Presidents for the year."

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OF THE

ENTOMOLOGICAL SOCIETY

OF LONDON.

DECEMBER 31st, 1873.

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THE

TRANSACTIONS

OF THE

ENTOMOLOGICAL SOCIETY

OF

LONDON

FOR THE YEAR 1873.

I. *On a new genus of* Colydiidæ, *from Japan.*

By T. Vernon Wollaston, M.A., F.L.S.

[Read 6th January, 1873.]

Fam. Colydiidæ.

Genus *Pseudotarphius* (nov. gen.).

Corpus subovale, convexum, rugosum, setosum ac lutoso-squamosum: *capite* prothoracis excavatione usque ad *oculos* magnos setosos prominentes immerso: *prothorace* in disco subgibboso, ad latera valde et subæqualiter rotundato, subtus simplici (nec pro antennarum receptione utrinque excavato): *scutello* parvo, rotundato, ægre observando sed tamen distincto: *abdomine* e segmentis 5 composito, segm.^{is} 4 baseos brevibus ac longitudine paulatim decrescentibus. *Antennæ* prothoracis longitudine, distantes, ante oculos et sub margine capitis insertæ, 10-articulatæ, art.^{is} 1mo et 2do crassiusculis (reliquis majoribus), illo superne vix perspicuo, 3^{tio} graciliore sed haud longiore, sex sequentibus (i. e. ad capitulum) subæqualibus, *capitulo* solido, subgloboso, uniarticulato (apice solum spongioso). *Mandibulæ* validæ, subtriangulares, apice acutæ inflexæ, intus in medio profunde sinuatæ et laciniâ membranaceâ pubescenti instructæ. *Maxillæ* bilobæ,

lobis subæqualibus, pubescentibus; *externo* versus apicem dilatato et valde truncato, dense barbato; *interno* paulo angustiore, vix breviore, valde ciliato, apice uncinato. *Palpi maxillares* art.° 1mo minuto, 2do 3^tio^que incrassatis, subæqualibus, ult.^mo^ elongato, robusto, ovato, ad apicem internum oblique subtruncato: *labiales* e scapis ligulæ connatis surgentes, art.° 1mo parvo, 2do majore clavato, ult.^mo^ elongato fusiformi-ovato et ad apicem minute truncato. *Mentum* corneum, subquadratum (antice haud excavatum). *Ligula* cornea, subquadrata, antice sat longe ciliata; *paraglossis* nullis. *Pedes* subcontractiles, setoso-squamosi, omnes ad basin parum et subæqualiter distantes: *tibiis* gracilibus, apice haud calcaratis: *tarsis* 4-articulatis, art.^is^ 1mo, 2do 3^tio^que subæqualibus, ult.^mo^ elongato, clavato, *unguiculis* simplicibus sat magnis armato.

Obs.—Genus corpore subovali, gibboso, rugoso, setoso et lutoso-squamoso, pedibus basi distantibus, tibiisque apice inarmatis, *Tarphium* primâ facie simulans; sed differt antennis 10- (nec 11-) articulatis, capitulo solido, uni- (nec bi-) articulato, oculis (ut in gen. *Trachypholis*, aut *Tarphiodes*) setosis ac magis prominentibus, necnon prothorace subtus simplici (nec pro antennarum receptione, inter otium, utrinque excavato). Cum genere *Trachypholis* oculis setosis congruit, sed discedit, inter alia, corpore minore, antennis 10-articulatis, capituloque solido (nec biarticulato). Cum *Parypho* (Americæ septentrionalis, sc. Columbiæ) antennarum structurâ fere congruit, sed prothorace subtus simplici, palporumque maxillarium art.° ult.^mo^ haud securiformi, præter alia, differt. A ψεῦδος, falsus, et *Tarphius*.

The four specimens from which the above structural diagnosis has been compiled, and which were taken by Mr. G. Lewis in Japan, have much the *primâ facie* aspect (in their gibbose, roughened, setose, and scaly surface, which is obscurely variegated, or in unrubbed examples spotted, with cinereous scales) of a small *Tarphius;* nevertheless a careful inspection will shew that they recede altogether, in reality, from the members of that genus. Thus, their antennæ, instead of being 11-, are only 10-jointed, with the club globular and solid, instead of biarticulate,—the eleventh joint being so completely *lost*, or soldered to the penultimate one, as to form, along with it, a perfectly undivided mass. Their eyes, too, are prominent and setose; and their prothorax is *not*

scooped-out, on either side, beneath, for the reception of the antennæ when thrown backward in a state of repose. In the fact of their eyes being studded with short bristles they agree with *Trachypholis* (= *Tarphiodes*, Woll.), from the Malay peninsula and the islands of the Oriental archipelago; but in that group, as well as in *Tarphiosoma* (from southern India and Ceylon), the antennæ are 11-jointed, and indeed nearly similar to those of *Tarphius*.* On the whole, they are perhaps (judging simply from the published description) more nearly allied, at any rate as regards the construction of their antennæ, to the South American *Paryphus*,—though even there the prothorax is stated to have grooves beneath it for the reception of the antennæ, and the terminal joint of the maxillary palpi is said to be securiform. I have little doubt therefore that Mr. Lewis's Japanese insect constitutes the type of a well-marked and totally new genus,—belonging, I may add, to that particular section of the *Colydiidæ* in which the first three joints of the feet are subequal, the tibiæ filiform and unarmed at their apex, and the whole of the legs widely separated at their base. In the details of its oral organs *Pseudotarphius* is almost coincident with *Tarphius*, *Tarphiosoma* and *Trachypholis;* but I have had no opportunity of comparing them with those of *Paryphus*.

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* Although I have not been able to inspect a type, I think it is most probable that Motschoulsky's genus *Tarphisoma* (Bull. Mosc. ii. 504), which was established in 1863 to receive two species from Ceylon and Timor, is identical with my *Tarphiosoma*, enunciated during the preceding year for the reception of an insect from Coimbatoor in southern India. Be this however as it may, I possess a *Tarphiosoma* (given to me some time ago by the late Dr. Schaum) from Ceylon, which is unquestionably distinct from the Malabar *T. indicum* (to contain which I originally proposed the group); and this species, which is remarkable for its unicolorous, blackish-brown surface, and the excessively long and erect setæ with which it is sparingly studded, I will take the opportunity of thus briefly characterizing:—

Tarphiosoma echinatum, n. sp.

T. subovale, picco-nigrum, opacum, squamulis fulvo-brunneis plus minus tectum, setisque robustis, longissimis, erectis brunneis parce obsitum; prothorace brevi, utrinque in medio valde rotundato-explanato, antice angustato et profunde emarginato, angulis anticis acutissimis porrectis, ad basin leviter bisinuato; elytris convexis, gibbosis, subrotundatis, mox pone scutellum, utrinque versus humeros necnon disjuncte in disco, atque pone discum (quasi in fasciâ transversâ valde fractâ) breviter setoso-fasciculatis. —Long. corp. lin. 2.

Captum in ins. Ceylon, a clariss. H. Schaum olim communicatum.

Pseudotarphius Lewisii, n. sp.

P. sat ovalis, niger, opacus, rugose sculpturatus, squamis cinereis plus minus dense variegatus, setisque suberectis parce obsitus; prothorace gibboso, in disco obsolete bifasciculato, ad latera (anguste marginata) valde et æqualiter rotundato; elytris (subter squamis transversim rugosis ac grosse seriatim punctatis) convexis et ad latera rotundatis, plus minus obscure cinereo-squamoso-maculatis (sc. maculâ majore longitudinali juxta scutellum, et circa 4 minoribus, plus minus confusis aut etiam evanescentibus); antennis tarsisque obscure rufo-ferrugineis.

Long. corp. lin. $1\frac{1}{4}$.

Captus in Japoniâ a Dom. G. Lewis, cujus in honorem nomen triviale stabilivi.

The general outline of this *Tarphius*-, or *Coxelus*-, like little insect is very peculiar,—its prothorax and elytra being both of them exceedingly convex, and separately rounded, which causes it to seem much *divided* in the middle (or rather at the junction of the two); whilst its roughened and setose surface is more or less obscurely clouded, or even (in unrubbed specimens) maculated, with dirty-white scales. The blotches, or spots, into which these paler scales tend (on the elytra) to condense themselves are in much the same positions as the nodules and patches are (when developed) on the *Tarphii*,—a rather large and longitudinal one being on either side of the scutellum, and about four smaller ones on each elytron, the one behind the middle disk having a *tendency* to form with the corresponding one on the opposite elytron a kind of extremely ill-defined postmedial fascia, which however is manifestly only traceable when the specimens are highly-coloured and fresh.

It gives me great pleasure to name the species after its discoverer,—whose entomological researches in Japan have brought to light so many novel, and geographically interesting, forms.

II. *On the* Cossonidæ *of Japan.*

By T. Vernon Wollaston, M.A., F.L.S.

[Read 6th January, 1873.]

Having been requested by Mr. G. Lewis to draw up a paper on the various members of the *Cossonidæ* which he obtained during his late residence in Japan, and which form an important (though perhaps not very considerable) item of his Coleopterous gleanings, I have done so,—though not without some slight degree of regret at the large number of new genera which I have found it necessary to establish. I say "regret," because where species are comparatively small in size, and present no modifications of structure which are at once striking and conspicuous, and where moreover external characters can alone be employed for the purposes of classification, one would far rather admit them into groups which are already recognized than propose additional ones for their reception. Yet, after a very careful examination of Mr. Lewis's material, I feel convinced that the ordinary European types do not prevail in that particular portion of the Japanese empire to which his researches have been confined,—their places being manifestly taken by kindred, and to some extent representative, forms, which have geographically too much importance not to be acknowledged as distinct. What the case may be in the northern and central parts of the archipelago I have no means of ascertaining,—for, unless I am much mistaken, Mr. Lewis's explorations were prosecuted chiefly in the island of Kushiu and the southern division of Nipon; but it is not improbable that the large island of Yesso, and the still larger and more northern one of Saghalien (which nevertheless is not, I believe, regarded as an integral portion of the Japanese empire), would have, to a considerable extent, faunas of their own. Be this however as it may, I would desire to state that it is to the *south* of Japan that the present memoir must be considered as more properly to pertain.

Glancing at the 18 species described below (and which are embodied in 15 genera), there are a few points which strike one as requiring comment,—amongst which stands

pre-eminent the remarkable fact that they appear to be *all* of them undescribed,* and that most probably, therefore, if they are not absolutely endemic, their areas of distribution are exceedingly limited in extent. This however is nothing more than what my own experiences in the Madeiran, Canarian, and Cape Verde archipelagos would have led me to anticipate, for in each of those groups their respective *Cossonidæ* are almost wholly peculiar; and the same is equally the case at St. Helena, and will perhaps be found to be so in most remotely-situated islands and archipelagos. But what surprises me more is that there does not appear to be any particular *type* (judging at least from the material to which I have had access) which, like *Microxylobius* at St. Helena and *Caulotrupis* in Madeira, would seem as it were to reign supreme, and to be *par excellence* prolific in its modifications; for, on the contrary, by far the greater number of the species which I have examined appear to belong to genera which are unmistakeably different from each other. Still, much allowance must doubtless be made for the limited size of the region which Mr. Lewis had the opportunity of investigating; and I would conjecture, therefore, that if any very numerous additions to the Cossonideous fauna of Japan are ultimately made they will probably pertain for the most part to the genera *Phlœophagosoma*, *Pseudocossonus*, and *Heterarthrus*, each of which have two representatives here enumerated, and the last of which appears to occur likewise in Ceylon.

One of the most salient facts is the discovery by Mr. Lewis of a new *Pentarthrum*, and also of two very distinct and well-marked genera (*Pentacoptus* and *Tychiodes*) in the small subfamily of which *Pentarthrum* is now recognized as the type, and in which the funiculus is composed of only five articulations. One of these genera, however, namely, *Tychiodes*, although communicated by Mr. Lewis, was in reality detected, I believe, by Dr. A. Adams,—who found several examples of it in the island of Awasima, near Sado, on the north-west coast of Nipon,

* The only one which I feel might possibly prove to be an exception to this statement is the first species on the list,—the *Tetratemnus sculpturatus*,—which seems to have a rather wider geographical range, and which may perhaps have been characterized as a *Dryophthorus*. Still I cannot satisfy myself that it will quadrate with the diagnosis of any described species; though it is certain that several closely allied forms have been published (I believe erroneously) as *Dryophthori*.

and consequently at a rather higher latitude than the area which was explored by Mr. Lewis. The *Pentarthrum* itself is peculiarly interesting, since the only two exponents of its group which had hitherto been brought to light are (respectively) from England and the island of Ascension; and I have remarked, in the proper place, on the affinity which it possesses, both in structure and habits, with those two species.

Amongst the *Cossonides* proper, *Pholidoforus* is unusually aberrant on account of the robust scales (so familiar, and ordinary, in certain other departments of the *Rhynchophora*) with which it is clothed; and *Xenomimetes* is noteworthy from representing, as it seems to me, in Japan, the genus *Eremotes* (or *Syntomocerus*) which infests the pine trees of the Canarian archipelago. *Sphærocorynes* introduces us to another *sub*-Hylastideous form (yet nevertheless strictly Curculionideous), of a very marked character; whilst *Stenoscelis*, which is still nearer to the *Hylastidæ* (being indeed the *nearest* to that family of all known Rhynchophorous types), has an interest, from a geographical point of view, emphatically its own, on account of the single exponent as yet described (the *S. hylastoides*, Woll., Journ. of Ent. i. 142, t. 11, f. 1) being a native of St. Helena and the Cape of Good Hope. Indeed *Stenoscelis*, *Pentarthrum* and *Hexarthrum* are the only genera, out of the 15 enumerated in this paper, which do *not* appear to be absolutely new.

In order to make the various forms, and their classification, intelligible, I have compiled, as a slight aid to the eye, the following tabular synopsis:—

Sectio Rhynchophora.

Fam. *Cossonidæ*.

a. *Funiculus* 4-*art*.....Subfam. *Dryophthorides*.

Genus 1. (Corpus parallelo-fusiforme, opacum, grosissime sculpturatum, parce lutosum) .. *Tetratemnus*.

b. *Funiculus* 5-*art*.....Subfam. *Pentarthrides*.

Genus 2. (Corpus breviter parallelo-oblongum, opacum, grosse sculpturatum, parce lutosum). *Pentacoptus*.

Genus 3. (Corpus angustum, subcylindricum, subnitidum, calvum) .. .. *Pentarthrum*.

Genus 4. (Corpus oblongo-ellipticum, latum, nitidiusculum, calvum; rostro gracillimo; prothorace transverso; metasterno breviusculo) . *Tychiodes*.

c. *Funiculus* 7- (*in* Hexarthro 6-) *art.*.....Subfam. *Cossonides.*

* *Rostrum vel plus minus elongatum, vel breve.*

† *Corpus opacum, plus minus squamosum, aut lutosum.*

Genus 5. (Corpus dense squamosum, subfusiforme. Antennæ elongatæ, mox ante medium rostri insertæ. Oculi prominentes. Tarsi longiusculi, art.° 3^tio^ bilobo) .. .. *Pholidoforus.*

Genus 6. (Corpus parce lutosum, subfusiforme. Antennæ breviusculæ, in medio rostri insertæ. Oculi demissi. Tarsi brevissimi, art.° 3^tio^ fere simplici) .. .. *Coprodema.*

Genus 7. (Corpus parce lutosum, subparallelum. Antennæ mediocres, in medio rostri insertæ. Oculi subdemissi. Tarsi longiusculi, art.° 3^tio^ bilobo) .. .. *Exodema.*

†† *Corpus plus minus nitidum, calvum.*

x. *Corpus plus minus cylindrico-fusiforme; elytris apice integris.*

Genus 8. (Rostrum elongatum, gracile. Antennæ plus minus graciles, capitulo abrupto. Pedes mediocres; tarsis mediocribus, art.° 3^tio^ fere simplici) .. .. *Phlœophagosoma.*

Genus 9. (Rostrum crassius. Antennæ crassæ, capitulo angusto, minus abrupto. Pedes valde incrassati; tarsis brevissimis, crassis art.° 3^tio^ bilobo, ult.° brevissimo conico. Corpus antice et subtus omnino levius sculpturatum, ... *Pseudocossonus.*

Genus 10. (Rostrum paulo brevius, crassiusculum, apice recte truncatum. Antennæ subgraciles, capitulo abrupto. Elytra sæpius pallidiora. Pedes longiusculi; tarsis elongatis, art.° 3^tio^ bilobo, ult.° secundum sexum diverso) .. *Heterarthrus.*

Genus 11. (Rostrum breve, crassum. Antennæ subcrassæ, capitulo haud abrupto. Pedes breves, crassi; tarsis breviusculis, crassiusculis, art.° 3^tio^ vix bilobo) .. .. .. *Macrorhyncolus.*

xx. *Corpus cylindricum; elytris apice ipso subdivaricatis.*

Genus 12. (Rostrum multo brevius, oculis prominentibus. Antennæ breviusculæ, capitulo abrupto. Tibiæ subflexuosæ; tarsis elongatis, gracilibus, art.° 3^tio^ fere simplici) .. .. *Xenomimetes.*

** *Rostrum brevissimum, crassum (aut parallelum, aut triangulare).*

Genus 13. (Rostrum subtriangulare, oculis demissis. Antennæ brevissimæ; scapo brevissimo; funiculo 6-articulato. Pedes anteriores ad basin fere contigui; tarsis gracilibus, longiusculis, art.° 3^tio^ simplici) .. .. *Hexarthrum.*

Genus 14. (Rostrum parallelum, oculis prominentibus. Antennæ longiusculæ, crassæ, capitulo magno. Pedes ad basin subæqualiter distantes ; tarsis robustis, art.° 3^tio bilobo) .. *Sphærocorynes.*

Genus 15. (Rostrum triangulare, oculis demissis. Antennæ brevissimæ, graciles. Pedes antici ad basin contigui; tarsis gracillimis, longissimis, art.° 3^tio fere simplici. Metasternum paulo minus elongatum) .. .. .. *Stenoscelis.*

a. *Funiculus* 4-*art.* . . . . (Subfam. Dryophthorides).

Genus 1. Tetratemnus (nov. gen.).

Corpus parallelo-subfusiforme, *Calandræ* formam simulans, valde profunde et grossissime sculpturatum, hinc inde parce subsquamoso-lutosum : *rostro* brevi, crasso, lineari ; *scrobe* profundâ, usque ad oculum currente ; *oculis* sat magnis, obliquis, transversis (sed infra nullo modo etiam subcontiguis), omnino demissis, longe ante marginem prothoracis sitis : *prothorace* ovato, antice et postice truncato : *scutello* minutissimo, punctiformi, vix observando : *metasterno* elongato : *elytris* antice subparallelis, postice ad utrumque latus (a medio usque ad apicem) oblique sectis, margine ipso versus apicem acute cariniformi. *Antennæ* breves, crassæ, pone medium rostri insertæ ; *scapo* curvato, gradatim clavato ; *funiculo* 4-articulato, art.° 1mo reliquis majore, sequentibus longitudine subæqualibus, latitudine crescentibus, 2do obtriangulari, 3^tio 4^toque transversis, hoc ad *capitulum* (magnum, ovalem, corneum, solidum, apice solum spongiosum pubescentem) arcte adpresso. *Pedes* breves, validi, *anteriores* ad basin parum distantes, *postici* magis, sed haud valde (ut in *Dryophthoro*) separati : *femoribus* muticis : *tibiis* ad apicem externum in uncum robustum productis : *tarsis* brevissimis, filiformibus, distincte 5-articulatis, art.^is 1mo, 2do 3^tioque subæqualibus (3^tio simplici, nec dilatato, nec bilobo), 4to minore sed valde conspicuo, ult.^mo *unguiculis* parvis armato.

Obs.—Genus *Dryophthoro* (teste generis typo—sc. *D. lymexylone*, europæo) affinitate proximum, et illo entomologicis adhuc confusum ; sed certe distinctum, nisi fallor. A *Dryophthoro* differt rostro pedibusque (præcipue tarsis) brevioribus, necnon coxis anticis inter se parum distantibus (nec subcontiguis), sed tamen coxis posticis conspicue minus quam in *Dryophthoro* separatis.

Dryophthoro aliter discedit elytris angustioribus, magis parallelis, lateraliter compressis, utrinque ad apicem multo magis cariniformibus, uncoque tibiali minus elongato.

A τετρα, quatuor, et τέμνω, scindo.

There can be no doubt that the weevil from which the above characters have been drawn out, if not already described as a *Dryophthorus*, is congeneric with several which have been referred to that group. Yet a careful comparison of it with the European *D. lymexylon* (which is stated expressly to be the *type*, and for examples of which, from Finland, I am indebted to Mr. E. W. Janson) is abundantly sufficient to shew that it cannot in reality be admitted into the same actual genus with that insect,—its shorter rostrum and legs, and (above all) the fact of its anterior coxæ being comparatively wide apart from each other (instead of nearly contiguous), whilst the posterior pair, on the other hand, are not *so* distantly separated as is the case in *Dryophthorus* proper, being differences of the utmost importance in this particular department of the *Rhynchophora*. As regards its less essential details, I may observe that its elytra are narrower and more parallel (or laterally-compressed) than in *Dryophthorus*, and have their keeled apical margin very much more prominent and developed; and that its antennæ are implanted a little further behind the middle of the rostrum, whilst its tibial hook and feet are considerably more abbreviated.

In other respects (and which it retains in common with *Dryophthorus*), I will merely mention that its 4-jointed funiculus and transverse eyes, and the fact of its abbreviated feet being distinctly *pentamerous* (the fourth articulation, although smaller than the preceding ones, being quite conspicuous and exposed—an almost unique feature, if not indeed entirely so, in the *Rhynchophora*), will combine to separate it from every other Cossonideous form with which we are here concerned.*

* In its shorter rostrum, antennæ, legs, and feet, as well as in the proportions of its funiculus-joints, *Tetratemnus* would appear (judging at least from the published diagnosis) to agree better with the genus *Chærorhinus*, Fairm., from the south of Europe, than with *Dryophthorus;* but from that group its eyes and tarsi will (apart from all other differences) at once separate it,—the former being transverse and depressed, instead of rounded and prominent, whilst the latter are filiform and conspicuously 5-articulate; whereas the feet in *Chærorhinus* are said to be (*ride* Fairmaire, in the French Annales for 1857, p. 742, and also Lacordaire, Gen. vii. 323) on the ordinary pseudotetramerous type, with their third joint

1. *Tetratemnus sculpturatus*, n. sp.

T. parallelo-subfusiformis, niger, opacus, squamis cinereo-fuscis lutosis plus minus obtectus; capite rostroque (præsertim in fronte foveolatâ) valde inæqualibus, grosse punctato-rugosis; prothorace ovato, antice et postice truncato, mox pone apicem profunde transversim constricto, foveam latam mediam fere efficiente, profunde, dense et grosse punctato; elytris valde profunde punctato-sulcatis, interstitiis alte costato-elevatis; antennis pedibusque brevibus, crassis, rufescentioribus. Subtus (capite excepto) grosse sed parce punctatus.

Long. corp. lin. $1\frac{1}{2}$—$1\frac{3}{4}$.

Captus inter pinos fungosque ad Hiogo, in ins. Nipon; necnon prope Nagasaki, in ins. Kushiu.

Its dark hue, in conjunction with its opake and very deeply and coarsely sculptured surface, which is more or less sparingly besmeared with a kind of *mud*-like scaly deposit, and which tends to fill up the various inequalities and punctures, will serve additionally to distinguish the present insect; though it is true that these particular characters exist likewise, to an almost equal extent, both in *Pentacoptus* and *Coprodema*. Nevertheless the *structural* details which I have given above (*par excellence* of funiculus, eyes, elytra, and feet) will suffice at once to separate the *T. sculpturatus* from the members of those two genera.

Judging from the comparatively large number of individuals now before me, and which Mr. Lewis would appear to have taken principally at Hiogo, in the island of Nipon, ("in old fungus-covered pines bordering a watercourse"), I think it is very likely that the present *Tetratemnus* is (if not common) at least widely spread; for it is remarkable that I had already an example of it in my collection which I captured a few years ago (dead) out of a cup of tea, while in the island of Jersey,—a fact which would perhaps indicate that the species occurs equally in China, and that the example alluded to was accidentally imported (much after the fashion which we are accustomed

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dilated and bilobed. By-the-by, it is much to be regretted that the generality of the continental Coleopterists still persist in characterising the tarsi of the *Rhynchophora* as *tetramerous* (which it is perfectly well known that they are *not*), and that too while the more correct term "pseudotetramerous" (proposed by Westwood upwards of thirty years ago,—*vide* Introd. p. 44) so exactly expresses their real structure.

to observe in such forms as *Silvanus* and *Calandra*,—to the latter of which indeed it bears at first sight a considerable resemblance).*

b. *Funiculus* 5-*art.* . . . . (Subfam. PENTARTHRIDES.)

Genus 2. PENTACOPTUS (nov. gen.).

Corpus parvum, breviter parallelo-oblongum, opacum, grosse sculpturatum, hinc inde parce subsquamoso-lutosum: *rostro* brevi (sed lineari), lato, depresso; *oculis* parvis, rotundatis, valde prominentibus; *scrobe* brevi, profundâ, mox infra oculum desinente et ibidem terminatâ: *prothorace* elongato-subquadrato, elytris sensim angustiore: *scutello* minutissimo, punctiformi: *metasterno* elongato. *Antennæ* brevissimæ, in medio rostri insertæ; *scapo* brevi, clavato; *funiculo* 5-articulato, art.° 1mo reliquis majore crassiore, sequentibus brevibus, latitudine vix crescentibus; *capitulo* parvo, solido, ad apicem obscure annulato et ibidem subspongioso subpiloso. *Pedes* breves, validi, crassi, *antici* ad basin fere approximati, *intermedii* paulo distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* brevibus, robustis, ad apicem externum in uncum magnum productis: *tarsis* brevibus, crassiusculis, art.° 3^tio^ paulo dilatato et bilobo, ult.^mo^ longiore (sed brevi), *unguiculis* minutissimis armato.

A πέντε, quinque, et κοπτὸς, sectus.

At first sight the opake and coarsely sculptured little weevil for the reception of which the above genus is proposed has much the outline and aspect of a small *Gronops;* though of course, when closely inspected, every one of its characters (more especially as regards its rostrum, antennæ, and tibial hooks, and the soldered first and second segments of its abdomen) will instantly remove it from the entire section of the *Byrsopsides*. Yet, despite its peculiarities of outline and sculpture, and the mud-like scales (so unusual in the present sub-family) with which its surface is partially clothed, there can be no doubt that its 5-jointed funiculus will assign it a place amongst the

* Judging from the published diagnoses, this insect appears to be distinct both from the *Dryophthorus bituberculatus*, Fab. (which seems to occur in New Zealand, various islands of the Pacific, California, &c.), as well as from the *excavatus*, Dej. (which is registered as a Madagascar species).

Pentarthrides of the *Cossonidæ;* whilst its fully developed eyes, and medially inserted antennæ, in conjunction with its just appreciable scutellum and elongate metasternum, will tend still further to retain it in the immediate vicinity of *Pentarthrum* proper.

2. *Pentacoptus gronopiformis,* n. sp.

P. breviter parallelo-oblongus, piceo-niger, opacus, squamis fusco-cinereis lutosis plus minus obtectus; capite prothoraceque profunde et dense punctatis, rostro (brevi, parallelo, latiusculo, depresso) grosse longitudinaliter strigoso, oculis parvis sed valde prominentibus, hoc elongato-subquadrato, mox pone apicem profunde transversim constricto; elytris parallelis, prothorace latioribus, grosse et confertim punctato-sulcatis, interstitiis alte costato-elevatis; antennis pedibusque (præsertim illis) brevibus, rufescentioribus, illarum capitulo parvo. Subtus profunde et grosse punctatus.

Long. corp. lin. $1\frac{1}{2}$.

Captus in trunco quodam antiquo *Camelliæ japonicæ* ad Nagasaki, in ins. Kushiu, mense Augusto, A.D. 1865.

Apart from the features (some of them generic ones) above alluded to, the excessive shortness of the limbs of this coarsely sculptured and somewhat *Gronops*-shaped little Cossonid, added to the fact that its elongate-squarish prothorax (which is deeply constricted just behind the front margin) is appreciably narrower than the elytra, whilst its longitudinally strigulose rostrum is short and broad, but nevertheless linear and comparatively depressed, will all combine to give it a character which, when once seen, it is impossible to mistake. It appears to have been taken by Mr. Lewis at Nagasaki, in the island of Kushiu, —"out of an old *Camellia* tree in the garden of the British Consulate."

Genus 3. PENTARTHRUM.

Wollaston, Ann. Nat. Hist. xiv. 129 (1854).

Corpus lineari-cylindricum, angustum, sculpturatum, calvum: *rostro* lineari, vel (ut in *P. angustissimo*) subgracili, vel crassiore; *oculis* rotundatis, prominentibus; *scrobe* brevi, leviter decurvâ, infra oculum vix currente: *prothorace* vel (ut in specie nostrâ) ovali, vel (ut in *P. Huttoni*) ovato, vel (ut in *P. cylindrico*) ovato-cylindrico,

antice et postice truncato, mox pone apicem transversim constricto: *scutello* subrotundato, parvo sed conspicuo: *metasterno* valde elongato: *elytris* parallelis. *Antennæ* breviusculæ, in medio (aut potius mox ante medium) rostri insertæ; *scapo* robusto, gradatim clavato; *funiculo* 5-articulato, art.° 1mo reliquis paulo majore, sequentibus brevibus subæqualibus (tamen in *P. Huttoni*, britannico, 2do sensim paulo elongato); *capitulo* parvo, ovali. *Pedes* subrobusti, *antici* ad basin parum, *intermedii* paulo magis, et *postici* remote inter se distantes: *femoribus* muticis: *tibiis* ad apicem externum in uncum productis: *tarsis* art.^is^ 1mo, 2do 3^tio^que longitudine subæqualibus, 3^tio^ vel (ut in specie nostrâ atque in *P. Huttoni*) sensim latiore et paululum bilobo, vel (ut in *P. cylindrico*) fere simplici, ult.^mo^ clavato *unguiculis* parvis armato.

Although *Pentarthrum* is not a new genus (it having been established by myself in 1854), I have nevertheless given a full diagnosis of it in order to point out the exact particulars in which it differs from the other groups of the *Cossonidæ* with which we are here concerned; and it will perhaps be sufficient therefore to remark that the comparatively narrow, parallel, and elongate bodies of the few species which have as yet been ascertained to compose it, in conjunction with their but very slightly shining, piceous and rather closely sculptured surfaces (which are entirely free from both scales and pubescence), their almost medially inserted antennæ, their 5-jointed funiculi, and their linear but somewhat robust rostra, will suffice to distinguish it from its immediate allies.

3. *Pentarthrum angustissimum*, n. sp.

P. lineare, angustissimum, depressiusculum, subnitidum, clare piceum; rostro lineari, punctulato, oculis rotundatis, prominulis; prothorace ovali, antice posticeque truncato, mox pone apicem profunde transversim constricto, paulo grossius punctato, postice in medio late sed leviter depresso; elytris prothorace paulo angustioribus, parallelis, profunde et confertim sulcato-punctatis, interstitiis sensim elevatis; antennis pedibusque breviusculis, rufescentioribus, illarum capitulo parvo, ferrugineo. Subtus profunde et argute punctatum.

Long. corp. lin. $1\frac{1}{2}$—$1\frac{1}{3}$.

Captum prope Nagasaki, in ins. Kushiu, circa domos. Junio haud infrequens.

The structural characters of this narrow and linear little Cossonid shew it to be a true *Pentarthrum*,—its 5-jointed funiculus, medially-inserted antennæ, and its developed eyes and scutellum, added to its colour, outline, and sculpture, being in entire accordance with the two hitherto described members of that group. I say "two," because a more careful examination of the unique weevil from St. Helena, which I enunciated nearly three years ago under the title of *Pentarthrum subcœcum*,* has recently convinced me that it is the type of a new genus allied to *Mesoxenus* (well characterized not only by its obsolete eyes and scutellum and its more apically-implanted antennæ, but likewise by its convex, largely-developed prothorax and general aspect and sculpture), and *not* an "aberrant *Pentarthrum*." So that, up to the present date, only two veritable *Pentarthra* had been brought to light,—namely, the English *P. Huttoni* (for the reception of which, in 1854, I originally proposed the genus), and the *P. cylindricum*, which was detected by the late Mr. Bewicke in the island of Ascension; and I need scarcely add therefore that a third representative, from Japan, and one so remarkably well defined, is a fact of considerable importance geographically. As elsewhere stated, however, there is a peculiarity about the *modus vivendi* of the *Pentarthra* which renders it highly probable that the group will be found eventually to have a very wide range,—their habits being, apparently, to follow in the wake of civilization by attaching themselves to old planks, boards, rafters, casks, &c., on the rotten (and often tinder-like) wood of which they more especially subsist. Thus the English *P. Huttoni* was obtained originally amongst logs of wood which had been long laid up in an out-house, and it was subsequently met with in a decayed cask near Plymouth, and by myself in portions of an ancient plank adjoining my house and conservatory at Teignmouth; and, in like manner, the *P. cylindricum*, at Ascension, was captured abundantly by Mr. Bewicke in the broken-up wood of a worn-out box in which plants had been cultivated. It is consequently quite in accordance with what I may perhaps be permitted to call their generic mode of life that the present *Pentarthrum* should have been discovered by Mr. Lewis, in Japan, "by beating the straw roofing of old cottages near Nagasaki;" and I may further remark that I believe him to be perfectly correct when he

* *Vide* Ann. Nat. Hist. (1869).

conjectures that "in all probability it really lived in the rafters."

The *P. angustissimum* is more nearly allied to the *P. cylindricum* from Ascension than to the English *P. Huttoni*, but it is relatively very much narrower than either, its rostrum is a little longer, and its prothorax is more constricted behind the front margin, and more depressed (as in *Mesites*) down its posterior disc. Its elytra also are more closely sculptured, and have their interstices more raised. In its short antennæ and small club it is more in accordance with the Ascension species than with the English one.

Genus 4. Tychiodes (nov. gen.).

Corpus oblongo-ellipticum, latum, depressum, sculpturatum, calvum: *capite* parvo; *rostro* elongato, gracillimo, lineari, tereti; *oculis* sat magnis, rotundatis, paulo prominulis; *scrobe* subrectâ, vix ad oculum currente: *prothorace* brevi, rotundato-ovato, antice et præsertim postice valde truncato: *scutello* subrotundato, valde conspicuo; *metasterno* longiusculo (vix elongato): *elytris* oblongo-ellipticis, basi late truncatis. *Antennæ* longiusculi, subgraciles, mox pone medium rostri insertæ; *scapo* flexuoso, clavato; *funiculo* 5-articulato, art.° 1mo sat magno rotundato-obovato, sequentibus inter se laxis, subperfoliatis, 2do elongato, obconico, 3^tio^, 4to 5^to^que longitudine subæqualibus, latitudine crescentibus, 5to ad *capitulum* magnum ovalem abruptum distincte annulatum haud adpresso. *Pedes* crassi, *antici* ad basin parum, *intermedii* paulo magis, et *postici* remote inter se distantes: *femoribus* muticis, et (præsertim anticis) crassis: *tibiis* ad apicem externum in uncum brevem productis: *tarsis* elongatis, art.^is^ 1mo, 2do 3^tio^que longitudine subæqualibus (1mo paululum longiore), 3^tio^ reliquis multo latiore et distincte profundeque bilobo, ult.^mo^ elongato clavato, *unguiculis* sat magnis armato.

Obs.—Genus inter *Cossonidas* valde anomalum, distinctum; conspicuum est rostro elongato gracillimo lineari tereti, pedibus crassis, tarsorum elongatorum articulo tertio lato necnon conspicue profundeque bilobo, metasterno minus elongato (sed vix brevissimo ut in gen. *Microxylobio*), abdominis segmento primo breviusculo, corpore oblongo-elliptico latiusculo depresso (prothoraceque lato, brevi, transverso), etiam *Tychii* formam fere simulante. Aliter exstat capite parvo, scutello valde distincto, antennis longi-

usculis subgracilibus (funiculi 5-articulati articulo secundo elongato) et mox pone medium rostri insertis, necnon pedibus (præsertim anticis) incrassatis.

A *Tychius* et εἶδος, aspectus.

The very anomalous little Cossonid (several examples of which were taken by Dr. Adams in the island of Awasima, near Sado, off the north-west coast of Nipon) from which I have compiled the above generic diagnosis is one of the most remarkable members of the family which has hitherto been brought to light, and one which is especially important as adding another and most well-defined form to that particular section which is characterized by *Pentarthrum*, *Pentacoptus*, the Atlantic *Pentatemnus* and *Mesoxenus*, the south-European *Amaurorhinus* (if indeed it be truly distinct from *Mesoxenus*), and the St. Helena *Microxylobius*,—in all of which the funiculus is composed of only five joints. *Primâ facie* indeed its aspect is so remarkable (from its rather depressed, wide, oblong-elliptic body, short, transverse prothorax, and extremely slender, linear rostrum) as to be slightly suggestive of a large *Tychius* and other members of the *Erirhinidæ;* nevertheless the structure of its abdomen, tibiæ, and other details, show it to be an unmistakeable Cossonid. In other respects it is conspicuous for the smallness of its head, and for its antennæ (which are rather long and slender) being implanted a trifle behind the middle of its very narrow rostrum, with their scape flexuose, and their funiculus-articulations (the second of which is comparatively elongate and subconical) somewhat loosely connected together. Its metasternum and the basal segment of its abdomen are both of them rather shorter than is the case in the ordinary members of this family (though the former is not *so* abbreviated as in the *Microxylobii* of St. Helena); its scutellum is very apparent; its legs are a good deal thickened, especially the anterior pair; and its feet are considerably developed, with their third joint widened and deeply bilobed.

4. *Tychiodes Adamsii*, n. sp.

T. oblongo-ellipticus, latus, depressus, nitidus, brunneo-piceus; capite parvo, rostro lineari, angustissimo, nitidissimo, fere impunctato, fronte foveolatâ et punctulis perpaucis adspersâ; prothorace brevi, transverso, rotundato-

ovato, antice et præsertim postice valde truncato, distinctius sed haud dense punctato, postice in medio foveâ rotundatâ leviter impresso; elytris oblongo-ellipticis, basi late truncatis, sat profunde punctato-striatis, interstitiis latis, convexiusculis et parcissime minutissimeque (sub lente) punctulatis; antennis clarioribus, capitulo magno pallidiore. Subtus paulo levius, et subremote punctatus, necnon minutissime pubescens.

Long. corp. lin. $1\frac{1}{2}$—2.

Captus in ins. Awasima, juxta ins. Nipon, a Dom. A. Adams, M.D., cujus in honorem nomen triviale proposui.

Apart from the features already pointed out, and which are principally structural ones, the present peculiar and somewhat *Tychius*-like Cossonid may be known by its rather shining and brownish-piceous surface,—the prothorax of which is sharply, but not very deeply or closely, punctulated, whilst the punctures of its deep and wide elytral striæ are distinct and large. I have much pleasure in dedicating it to its discoverer, Dr. A. Adams,—through whose kindness I have received several examples, for inspection, which have been transmitted to me by Mr. G. Lewis.

c. *Funiculus 7-art.* . . . (Subfam. Cossonides.)

* *Rostrum vel plus minus elongatum, vel breve.*

Genus 5. Pholidoforus (nov. gen.).

Corpus angustulum, fusiformi-elongatum (sc. in medio parallelum, antice et postice attenuatum), sculpturatum, squamosum: *rostro* longiusculo, angustulo, subtereti; *scrobe* profundâ, curvatâ, longe infra oculum desiliente; *oculis* parvis, rotundatis, prominentibus, longe ante marginem prothoracis sitis: *prothorace* elongato-ovato, antice et postice truncato: *scutello* subrotundato, distincto: *metasterno* elongato: *elytris* antice parallelis, postice acutiuscule productis. *Antennæ* elongatæ, graciles, mox ante medium rostri insertæ; *scapo* recto, leviter clavato; *funiculo* 7-articulato, art.° 1mo subquadrato-obconico (reliquis majore, sed vix magno), sequentibus longitudine subæqualibus, latitudine paulo crescentibus; *capitulo* sat magno, ovali, distincte annulato. *Pedes* elongati, *antici* ad basin parum approximati, *intermedii* paulo distantiores, *postici* valde distantes;

femoribus muticis: *tibiis* ad apicem in uncum inflexum, necnon ad internum in spinulam parvam productis: *tarsis* longiusculis, art.° 1mo secundo sensim longiore, 3^{tio} latiusculo et evidenter bilobo, ult.^{mo} elongato clavato, *unguiculis* sat magnis armato.

Obs.—Genus inter *Cossonidas* corpore dense squamoso insignum. Aliter conspicuum est formâ subangustâ, in medio parallelâ, antice et postice attenuatâ, antennis longiusculis, gracilibus, mox ante medium rostri insertis, oculis parvis sed prominentibus, funiculi articulo secundo tertio viz longiore, tarsorumque articulo tertio præcedentibus evidenter latiore atque bilobo.

A φολίς, squama, et φέρω, fero.

In its densely *scaly* surface the present insect affords a curious exception to what is usual amongst the *Cossonidæ;* for although it is true that *Tetratemnus*, *Pentacoptus*, *Coprodema* and *Exodema* are likewise remarkable for the few *mud*-like scales with which they would seem to be more or less partially incrusted, in *Pholidoforus* the body is regularly and somewhat closely beset with short, thick, fulvo-cinereous scaliform setæ,—a portion of which are slightly erected, and the others altogether decumbent. Yet the structure of its abdomen, tibiæ, eyes, rostrum, and 7-jointed funiculus show it to be an unmistakeable member of this subfamily. In other respects it may be known by its narrowish and fusiform outline (it being parallel in the middle, but acute both before and behind), by its rather long and slender antennæ being inserted just before the middle of its appreciably curved rostrum, by its eyes being small and rounded but very prominent, by its funiculus having the second joint scarcely at all longer than the third, and by its feet being a good deal developed and lengthened,—their third articulation being rather broad (for the *Cossonidæ*) and bilobed.

5. *Pholidoforus squamosus*, n. sp.

P. angustulus, elongato-subfusiformis (antice posticeque acutus), brunneo-niger, opacus, squamisque fusco-cinereis (suberectis et demissis, necnon interdum fulvescenti-tinctis) plus minus dense tectus; capite prothoraceque (subter squamis) profunde et rugose punctatis, rostro longiusculo, subarcuato, oculis parvis, rotundatis, prominentibus; elytris antice parallelis, postice acutis, (subter squamis) profunde, confertim et grosse sulcato-punctatis, interstitiis seriatim

squamosis; antennis elongatis, picco-ferrugineis, capitulo sat magno, pallidiore. Subtus profunde et grosse punctatus.

Long. corp. lin. circa $1\frac{2}{3}$.

Captus prope Nagasaki, in ins. Kushiu.

Not to mention the many features to which I have above alluded, the present fusiform (or somewhat anteriorly and posteriorly acute) Cossonid may be known from the other species described in this paper by the dirty, yellowish-brown hue of the short setæ and mud-like scales with which its opake and coarsely-sculptured surface is rather densely clothed. There are eleven examples of it amongst the Coleoptera which were collected by Mr. Lewis in Japan, which (judging from an appended label) appear to have been beaten out of "old hedges" near Nagasaki in the island of Kushiu.

Genus 6. Coprodema (nov. gen.).

Corpus subfusiforme (in medio subparallelum, antice et postice leviter attenuatum), profunde sculpturatum, hinc inde parce subsquamoso-lutosum; *rostro* longiusculo, angustulo, subtereti; *scrobe* curvatâ, infra oculum desiliente; *oculis* subrotundatis, demissis, longe ante marginem prothoracis sitis: *prothorace* ovato, antice et postice truncato: *scutello* rotundato, distincto: *metasterno* elongato: *elytris* antice subparallelis, postice acutiusculis sed ad apicem ipsum truncatis. *Antennæ* in medio rostri insertæ; *scapo* breviusculo, clavato; *funiculo* 7-articulato, art.° 1mo reliquis paulo majore, sequentibus longitudine subæqualibus, latitudine paulo crescentibus; *capitulo* sat magno, ovali, distincte annulato. *Pedes* breviusculi, validi, *antici* ad basin fere approximati, *intermedii* paulo distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* ad apicem externum in uncum magnum valde inflexum, necnon ad internum in spinulam minutam productis: *tarsis* brevibus, filiformibus, art.^{is} 1mo, 2do 3^{tio}que latitudine longitudineque subæqualibus (3^{tio} fere simplici, i. e. præcedentibus vix latiore et vix bilobo), ult.^{mo} vix clavato, *unguiculis* parvis armato.

Obs.—Genus staturâ sculpturâque etiam *Calandram* primâ facie simulans, et aliquo modo *Pholidoforo* congruens; sed ab hoc distinguitur corpore grossius sculpturato, antice et postice minus acuto, et multo minus squamoso (squamis quasi luteis solum, nec setiformibus, parciusque adspersis), necnon elytris ad apicem sensim

truncatis, antennis pedibusque brevioribus,—illis in medio (nec ante medium) rostri insertis, et his paulo valioribus, unco tibiali longiore robustiore ac magis curvato, tarsisque multo brevioribus ac fere simplicibus (articulo tertio præcedentibus vix majore et vix bilobo).

A κόπρος, lutum, et δέμας, corpus.

The *primâ facie* aspect and outline of the opake and deeply sculptured little weevil for which I have been compelled to establish the present genus is a good deal suggestive of *Calandra;* but its 7-jointed funiculus, medially-inserted antennæ, widely separated eyes, and short, filiform feet, apart from the other details of its structure, show it to be an undoubted Cossonid. Indeed, in the tendency of its surface to become unequally incrusted with mud-like scales (or which, perhaps, has more the appearance of a kind of scaly *deposit*) it approaches *Pholidoforus;* but in that genus the clothing is not only very much denser and more regular, but the scales are of an ordinary character, many of them being suberect (though short) and setiform. In other respects *Coprodema* differs from *Pholidoforus* in being rather smaller, and less acute both before and behind, and more coarsely and conspicuously sculptured, in having its elytra appreciably truncated at their hinder apex (though perhaps not sufficiently so to expose any decided portion of the pygidium), and in its limbs being very considerably shorter,—the antennæ, moreover, being implanted in the middle of the rostrum (instead of somewhat before it), whilst its tibial hook is more largely developed and its feet *very much less so* (the third joint being small and almost simple, and the terminal one *comparatively* abbreviated and but little clavate, with the claws smaller).

6. *Coprodema calandræformis*, n. sp.

C. subfusiformis, nigra, opaca, parce inæqualiter subcinereo-squamoso-lutosa; capite prothoraceque profunde, rugose et confertim punctatis (punctis in hoc grossis), rostro versus apicem rufescentiore et ibidem vix sculpturato, oculis omnino demissis; prothorace mox pone apicem transversim constricto; elytris profunde, confertim et grosse punctato-sulcatis, interstitiis alte et argute costatis ac (oculo fortissime armato) minutissime et vix perspicue seriatim setulosis, ad apicem ipsum truncatis; antennis pedibusque brevibus, robustis, rufescentioribus, capitulo sat magno,

pallidiore, tarsis parvis, brevibus. Subtus profunde et grosse punctata.

Long. corp. lin. circa $1\frac{1}{2}$.

Capta ad Nagasaki in ins. Kushiu, necnon inter arbores antiquas ad Hiogo in ins. Nipon.

I have already so fully pointed out the structural peculiarities of this insect that I need scarcely do more than call attention to its very coarsely sculptured surface, the elytral interstices being likewise raised into conspicuous ridges or costæ. There are thirteen examples of it now before me, amongst Mr. Lewis's Coleoptera, a portion of which have the label appended to them of "Nagasaki;" and others were taken "in deciduous trees near the watercourse at Hiogo, in the island of Nipon."

Genus 7. Exodema (nov. gen.).

Corpus et *structura generalis* fere ut in *Coprodema*, sed *illud* paulo majus ac paulo magis parallelum (i.e. minus fusiforme), *rostro* paululum crassiore, *oculis* vix majoribus, *antennis* sensim longioribus, *capitulo* submajore, necnon mox ante medium (nec omnino in medio) rostri insertis, *elytris* integris (nec ad apicem subtruncatis), *metasterno* sublongiore, *pedibus*que conspicue longioribus, —*femoribus* sensim minus clavatis, et *tarsis* (multo longioribus) haud filiformibus, art.° 3^{tio} evidenter latiore ac bilobo.

Ab ἔξω, extra, et δέμας, corpus.

In its general outline, and opake, densely sculptured surface (which is more or less sparingly besmeared with dirty, whitish scales (or, as it were, a kind of mud-like deposit), the unique insect from which the above characters have been taken so closely resembles *Coprodema* that it might well be regarded, at first sight, as another member of that group; yet when accurately inspected it differs so essentially in the structure of its feet, which are not only much longer but have their third joint (instead of small and simple) appreciably widened and bilobed, that I cannot but treat it as the type of a nearly-allied but probably distinct genus. As regards its less important particulars, its antennæ are a trifle more elongate, and not *quite* so medially inserted, being implanted just perceptibly *before* the middle of its (rather thicker) rostrum, its eyes are a little more developed, its elytra are not at all truncated at their apex, and its metasternum and legs

(especially the latter) are appreciably longer. Its femora also (at any rate the anterior pair) are, proportionately, not quite so clavate.

7. *Exodema sublutosa*, n. sp.

E. parallelo-subfusiformis, piceo-nigra, opaca, parce inæqualiter subcinereo-squamoso-lutosa; capite prothoraceque profunde, rugose et confertim punctatis (punctis in hoc grossis), oculis subprominulis; prothorace mox ponc apicem transversim constricto; elytris profunde, confertim et grosse punctato-sulcatis, interstitiis dense transversim rugulosis, costatis, ac (oculo fortissime armato) minutissime et vix perspicue seriatim setulosis; antennis pedibusque rufescentioribus, capitulo magno, pallidiore, tarsis longiusculis. Subtus profunde et grosse punctata.

Long. corp. lin. $1\frac{2}{3}$.

Capta cum specie præcedenti ad Hiogo in ins. Nipon, hactenus unica.

Apart from the characters above enumerated, the present insect differs from the *Coprodema calandræformis* (which *primâ facie* it very closely resembles) in being a trifle larger and more parallel, and in its elytral interstices being less sharply costate and more transversely-rugulose. The single example from which the diagnosis has been compiled is also a little more piceous in hue, and not quite so densely besmeared with mud-like scales; but this may be merely accidental. It was mixed-up with Mr. Lewis's specimens of the *Coprodema calandræformis* (captured at Hiogo, in the island of Nipon), and from which indeed I did not at first sight distinguish it.

Genus 8. Phlœophagosoma (nov. gen.).

Corpus angustulum, elongatum, plus minus linearifusiforme, calvum, profunde sculpturatum: *rostro* elongato, angustulo, tereti, arcuato; *scrobe* profundâ, curvatâ, infra oculum desiliente; *oculis* longe ante marginem prothoracis sitis, plus minus demissis: *prothorace* elongato-ovato, antice et postice truncato, fere integro (i.e. pone apicem vix constricto); *scutello* rotundato, valde distincto: *metasterno* elongato: *elytris* elongatis, nunc ovato-subcylindricis, nunc subcylindricis. *Antennæ* elongatæ, in medio rostri insertæ; *scapo* subrecto, leviter clavato; *funiculo* 7-articulato, art.° 1mo subquadrato-obconico (reliquis majore, sed vix magno), sequentibus

latitudine paulo crescentibus; *capitulo* sat magno, ovali, distincte annulato. *Pedes* validi, *antici* ad basin fere approximati, *intermedii* distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* ad apicem externum in uncum magnum productis: *tarsis* brevibus, art.^{is} 1mo, 2do 3^{tio}que longitudine subæqualibus (nec 1mo elongato), 3^{tio} fere simplici (i.e. vix dilatato, vix bilobo), ult.^{mo} *unguiculis* minutissimis armato.

Obs.—Genus *Phlœophago* et *Rhyncolo* affinitate proximum, sed corpore angustiore, magis fusiformi, minus convexo, prothorace magis elongato, rostro longiore graciliore, tarsisque sensim brevioribus (art.^{is} 1mo, 2do et 3^{tio} longitudine subæqualibus, nec 1mo elongato) facile distinguitur.

A *Phlœophagus*, et σῶμα, corpus.

(Typus.—*P. minutum*.)

The two insects from which the above structural diagnosis has been compiled are so dissimilar in size, and are so distinct in several points of their structure (albeit not very important ones), that I cannot feel entirely satisfied that they should be looked upon as members of the same actual group; yet, being unwilling to multiply genera unnecessarily, and thinking it far from improbable that species of intermediate stature will ultimately be brought to light, I prefer to treat them as congeneric,—premising only that I would desire to regard the *P. minutum* as the type.

In their *primâ facie* aspect these two insects have more perhaps in common with the European *Phlœophagi* and *Rhyncoli* than any other of the species which were obtained by Mr. Lewis in Japan; and yet from both of those (nearly allied, and not very satisfactorily separated) forms they are, I think, manifestly distinct,—differing in being not only narrower and more fusiform and less convex, but likewise in their prothorax and rostrum being proportionately more elongate, whilst their tarsi are appreciably shorter, the first joint being (instead of produced) subequal in length with the second and third.

Although, however, the antennæ of both of the species described below are inserted medially, there is a slight disparity in the structure of those organs, as well as in that of their tibiæ,—the second funiculus-joint being no longer than the following ones in the *P. minutum*, and

the tibiæ being armed at their inner apex with an evident minute spinule; whilst in the *P. cuvirostre* the tibiæ have their inner angle almost simple, and the second articulation of the funiculus appreciably a little elongated and obconic. Moreover in the first of the species the body is very minute and fusiform, whereas that of the second is *comparatively* large, and more depressed and parallel. Yet these discrepancies are very likely, after all, no more than specific ones.

a. *Corpus minutum; scutello distincto; antennis gracilibus, funiculi art.° 2do sequentibus non longiore; tibiis ad apicem internum in spinulam parvam productis.*

8. *Phlœophagosoma minutum*, n. sp.

P. elongatum, ovato-fusiforme, gracile, angustulum, subnitidum, piceum; rostro elongato, angustulo, tereti, subcurvato, versus apicem rufescentiore, magis polito ac minute parceque punctulato, oculis demissis; prothorace elongato-ovato, antice posticeque truncato, convexo, sat grosse sed leviter punctato; elytris elongate subcylindrico-ovatis basi truncatis, profunde et confertim sulcato-punctatis (aut forsan crenatis), interstitiis costato-elevatis et subrugulosis, ante apicem conspicue constrictis; antennis pedibusque clare rufo-piceis (aut fere piceo-ferrugineis), illarum capitulo pallidiore. Subtus subparce punctatum, punctis vix profundis.

Long. corp. lin. circa $1\frac{1}{4}$.

Captum ad radices graminis, per oram arenosam maritimam, ad Simabara, in ins. Kushiu.

Apart from its characters of comparatively minute size, narrow, fusiform outline, rather elongate rostrum, and deeply sculptured, convex upper surface, the present interesting little Cossonid may be further known by its piceous hue and brightly rufescent limbs, as well as by its (elongate-ovate) prothorax being almost unconstricted behind the apex, and by its eyes being hardly at all prominent. It is the smallest member of the family which was brought by Mr. Lewis from Japan. Six examples of it are now before me, which Mr. Lewis states were captured by a native collector, at the roots of a wild grass, on the sandy coast of Simabara, in the island of Kushiu.

b. *Corpus majus; scutello valde distincto; antennis robustis, funiculi art.° 2do sequentibus distincte paulo longiore; tibiis ad apicem internum fere simplicibus.*

9. *Phlœophagosoma curvirostre*, n. sp.

P. elongatum, parallelo-fusiforme, subnitidum, nigrum; rostro elongato, tereti, convexo, curvato, antice gradatim paulo angustiore, magis polito ac minute parceque punctulato, oculis minus demissis (sed vix prominentibus); prothorace elongato-ovato, antice posticeque truncato, subdepresso, grosse et valde profunde punctato; elytris subparallelis, postice gradatim subattenuatis, depressis, valde profunde et grosse sulcato-punctatis, interstitiis costato-elevatis et minutissime (vix perspicue) subseriatim punctulatis; antennis tarsisque piceis, illarum capitulo magno, pallidiore. Subtus profunde punctatum (punctis in medio metasterni obsoletis).

Long. corp. lin. 2.

Captum ad Hiogo, in ins. Nipon, hactenus unicum.

As already implied, I do not feel absolutely certain that this insect is congeneric with the preceding one; yet, judging from the single example from which the diagnosis has been drawn out, I scarcely think that its points of discrepancy are of sufficient importance to indicate generic separation,—for in their antennæ being inserted medially, as well as in their rostra being *comparatively* long and slender, their scutella conspicuous, and their feet short and subfiliform (the first joint of which is *not* elongated), they are *inter se* on much the same type. Yet the present species is *primâ facie* exceedingly different from the *P. minutum*,—being not only *very* much larger, darker, less narrowed, more parallel, more deeply sculptured and more depressed, but likewise with its scutellum larger, and its antennæ more robust, the second funiculus-joint of which is (although short) appreciably longer and more obconical than those which follow it. Its elytra also, instead of being elongate-ovate (or a little widened behind the middle), are more decidedly parallel, or, if anything, perhaps a trifle *narrowed* (gradually) behind; and its tibiæ do not appear to be armed with a little spinule at their inner apex. In addition to which its rostrum is somewhat thicker (especially towards the base), as well as convexer and more arcuate; and its eyes are less depressed.

Judging from an appended label, the single example from which the above description has been drawn out appears to have been captured by Mr. Lewis at Hiogo, in the island of Nipon.

Genus 9. Pseudocossonus (nov. gen.).

Corpus angustum, elongatum, plus minus fusiformi-cylindricum, calvum, minus profunde (saltem antice et subtus) sculpturatum: *rostro* parum elongato, robusto, tereti; *scrobe* profundâ, curvatâ, infra oculum desiliente; *oculis* longe ante marginem prothoracis sitis, rotundatis, prominulis: *prothorace* magno, elongato-ovato, antice et postice truncato, ad latera rotundato-ampliato, mox pone apicem leviter constricto: *scutello* rotundato, valde distincto: *metasterno* elongato: *elytris* subcylindrico-parallelis. *Antennæ* aut longiusculæ, aut breviusculæ, vix pone medium rostri insertæ, crassæ; *scapo* subflexuoso, gradatim valde clavato; *funiculo* 7-articulato, crasso, art.° 1mo subquadrato, sequentibus brevibus, latitudine paulo crescentibus, inter se sat arcte applicatis; *capitulo* parvo, ovali, minus abrupto, distincte annulato. *Pedes* validissimi, crassi, breves, *antici* ad basin fere approximati, *intermedii* distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* latis, ad apicem externum in uncum magnum inflexum, necnon ad internum in spinam robustam distinctam productis, *anticis* versus apicem internum intus distinctius pilosis: *tarsis* brevissimis, crassis, art.^{is} 1mo, 2do 3^{tio}que longitudine subæqualibus (nec 1mo elongato), 3^{tio} leviter dilatato et distincte bilobo, ult.^{mo} brevissimo (tertio vix longiore), conico, *unguiculis* minutissimis armato.

Obs.—Genus præcipue insignum pedibus valde robustis (sed brevibus), crassis, tibiis ad apicem conspicue armatis, tarsis brevissimis crassis, art.° ult.^{mo} brevissimo conico, necnon unguiculis minutissimis munito. Aliter conspicuum est prothorace magno, in medio rotundate ampliato (sed ibidem vix elytris latiore), minus profunde sculpturato, antennis (vix pone medium rostri insertis) incrassatis, funiculo crasso, articulis inter se subarcte adpressis, capitulo parvo atque minus abrupto, scutello valde distincto, necnon corpore elongato, fere parallelo, depressiusculo, nitido, *Cossoni* formam aliquo modo simulante.

A ψευδής, falsus, et *Cossonus*.

The present genus, the two representatives of which,

described below, have much the *primâ facie* appearance of small *Cossoni*, is well characterized by its extremely robust legs and abnormally short and incrassated feet, the apical joint of which is unusually abbreviated and (instead of being clavate) conical.* Its claws are excessively minute; and its antennæ, which are a good deal thickened, are implanted immediately behind the middle of the rostrum. In other respects it is remarkable for its broad funiculus-joints, which are closely compacted together (the second, moreover, not being at all longer than those which follow it), and for its rather small and but very slightly widened capitulum, as well as for its greatly developed prothorax, distinct scutellum, elongate, parallel outline, and the comparative robustness of the hook and spine at apex of its tibiæ,—the front pair of which, moreover, are densely fulvo-pubescent towards their inner extremity.

a. *Rostrum elongatum, antennis longiusculis: tibiarum spina apicalis interna valde distincta.*

10. *Pseudocossonus brevitarsis*, n. sp.

P. linearis, nitidus, niger, depressiusculus; capite prothoraceque parce et minute punctulatis (punctulis in medio rostri elongati evanescentibus), hoc magno, rotundato-ovato, ad latera in medio valde rotundato-ampliato; elytris elongatis, parallelis, subdepressis, parum profunde punctato-striatis, interstitiis latis convexis et parcissime minutissimeque (sub lente) punctulatis; antennis tarsisque crassis, robustis, piceis, illis (scapo excepto) tibiisque anticis versus apicem internum griseo-pubescentibus, capitulo parvo pallidiore. Subtus fere haud sculpturatus (tantum punctulis minutis obsoletis, tamen versus utrumque latus distinctioribus, adspersus).

Long. corp. lin. vix 3.

Captus prope Yokohama, adhuc unicus.

Both of the *Pseudocossoni* here described agree in their parallel outline and dark, shining surface, as well as in the fact of their head and prothorax being more finely and sparingly punctulated than in any of the other members of the family with which we are concerned; but the present

* Judging from the analogy of the genus *Heterarthrus*, it is not impossible that the conical structure of the last joint of the feet may prove to be a sexual character; but until further material, of the two species now under consideration, has been obtained, this point cannot be settled.

species is considerably larger, and a trifle less depressed, than the *P. brachypus*, and its rostrum and antennæ are longer. The former is likewise a little narrower (relatively) and more arcuate, its prothorax is more rounded-outwards in the middle, its elytra are unmargined at their extreme base, and the hook and spine at the apex of its tibiæ are somewhat more powerfully developed. The unique example from which the diagnosis has been compiled appears to have been captured by Mr. Lewis near Yokohama.

b. *Rostrum breviusculum, antennis brevibus: tibiarum spina apicalis minus elongata.*

11. *Pseudocossonus brachypus*, n. sp.

P. præcedenti minor et paulo depressior, rostro antennisque brevioribus (illo sensim latioribus), prothorace magis triangulari-ovato (i. e. pone medium, nec in medio, rotundate ampliato), elytris paulo brevioribus, ad humeros obsolete subrufescentibus, necnon ad basin ipsam prope scutellum evidenter marginatis, tibiis ad apicem internum minus elongate spinosis.

Long. corp. lin. 2.

Captus, semel tantum, ad Tomatzu, prope Nagasaki, in ins. Kushiu.

As already implied, the present *Pseudocossonus* is a little smaller and more depressed than the preceding one, and its rostrum and antennæ are shorter. The former, too, would seem to be a trifle broader, relatively, and less convex.

The prothorax, moreover, of the *P. brachypus* is more triangular (its widest point being *behind*, instead of at the middle): its elytra are distinctly margined at their extreme base (particularly on either side of the scutellum), with their humeral angles appreciably subrufescent; and the spinule at the inner apex of its tibiæ is not quite so powerfully developed. Like the *P. brevitarsis* it is unique, the single example having been taken by Mr. Lewis, at Tomatzu, near Nagasaki, in the island of Kushiu.

Genus 10. Heterarthrus (nov. gen.).

Corpus angustum, cylindrico-fusiforme, calvum, minus profunde sed supra dense sculpturatum, lætius in elytris coloratum (nec omnino nigrum): *rostro* breviusculo, ro-

busto, parallelo, apice recte truncato et interdum paulatim etiam sublatiore; *scrobe* antice brevi latâ profundâ auriculiformi, dein subito angulatim deflexâ et usque ad marginem oculi inferiorem currente; *oculis* longe ante marginem prothoracis sitis, rotundatis, prominulis: *prothorace* elongato-ovato, antice et postice truncato, mox pone apicem constricto: *scutello* subrotundato, distincto: *metasterno* elongato: *elytris* fusiformi-cylindricis, basi truncatis et ibidem anguste marginatis. *Antennæ* longiusculæ, aut mox ante medium aut in medio rostri insertæ; *scapo* gradatim clavato; *funiculo* 7-articulato, art.° 1mo subquadrato, vix incrassato, sequentibus brevibus, latitudine paulo crescentibus; *capitulo* magno, ovali, abrupto, distincte annulato. *Pedes* longiusculi, minus robusti: *femoribus* muticis, basi gracilioribus: *tibiis* ad apicem externum in uncum inflexum, necnon ad internum in spinam (in *anticis* distinctam, sed in *posticis* ægre observandam) productis, *posterioribus* subflexuosis, versus basin gracilioribus: *tarsis* elongatis, art.^is^ 1mo, 2do 3^tio^que longitudine subæqualibus (nec 1mo elongato), 3^tio^ leviter dilatato et distincte bilobo, ult.^mo^ longiusculo, in *maribus* clavato sed in *fœminis* (superne observando) fusiformi-conico (i. e. versus basin, nec versus apicem, subclavato), *unguiculis* sat magnis armato.

Obs.—Genus conspicuum colore elytrorum plus minus pallidiore, corpore angustulo cylindrico-fusiformi, antice confertim punctulato, rostro breviusculo crasso parallelo, ad apicem recte truncato, pedibus longiusculis subgracilibus, tibiis posterioribus subflexuosis, tarsisque elongatis, articulo ultimo secundum sexum diverso.

A ἕτερος, diversus, et ἄρθρον, articulus.

The narrowish, elongate-fusiform outline, and the rather short and thick (though parallel, and apically truncated) rostrum of the insects which compose the present genus, added to their slenderer and less abbreviated legs and their comparatively lengthened feet (the terminal articulation of which differs in shape, apparently, according to the sex), will serve to distinguish it from the allied groups. Indeed, the sexual peculiarity of the apical tarsal joint is very curious, and one which I do not remember to have observed in any other Rhynchophorous form,—it being ordinary and clavate in the males, but conical (or, rather, fusiform-conical) in the females, the widest part being

towards the base instead of towards the apex.* And *Heterarthrus* is further remarkable for the punctation of its head and prothorax being dense but at the same time fine, and for its elytra being more or less of a pallid hue (sometimes ornamented with a black patch),—an arrangement of colour which gives the insects a totally different aspect from any of the other *Cossonidæ* with which we have here to do. As regards the antennæ, they are inserted either in the middle or just before the middle of the rostrum; and the four posterior tibiæ are subflexuose and slender (particularly at their base), and less evidently armed at their inner apex. Their second funiculus-joint is (like the succeeding ones) short, and their club is large and abrupt.

a. *Antennæ mox ante medium rostri* (*paulo longioris*) *insertæ. Pedes elongati.*

12. *Heterarthrus Lewisii*, n. sp.

H. elongato-fusiformis, subnitidus, convexiusculus; capite prothoraceque vel nigris vel brunneo-nigris, dense sed argute punctulatis, hoc elongato-ovato, elytris vix angustiore; elytris fusiformi-cylindricis, basi anguste marginatis, rufo-ferrugineis (interdum nigro-pictis), striato-punctatis (striis versus suturam profundioribus), interstitiis latis depressis subrugulosis et parcissime minutissimeque (sub lente) punctulatis; antennis tarsisque plus minus piceo-ferrugineis, femoribus tibiisque plus minus piceis. Subtus leviter punctatus (punctis in abdomine fere obsoletis).

Variat elytris plagâ magnâ suffusâ post mediâ (antice per suturam versus scutellum angustius currente) nigrescenti-ornatis.

Long. corp. lin. $2\frac{1}{2}$.

Captus prope Nagasaki, in ins. Kushiu.

Species valde distincta, ornata, et in honorem cl. G. Lewis, insularum Japonicarum scrutatoris oculatissimi indefessi, citata.

* This character, although real, is not a very easy one to observe,—inasmuch as when viewed laterally the joint seems to be equally clavate, and similar, in both sexes; and it is only when inspected carefully from *above*, and beneath a high magnifying power, that the conical outline, in that of the females, becomes evident. And I may add that, since writing the above, I have remarked the same peculiarity of tarsal articulation in a Cossonid from Ceylon, which has been communicated to me by Mr. Janson, and which indeed I have every reason to suspect (without further examination) is a true *Heterarthrus*.

Being precisely similar in colour and sculpture, I should certainly have regarded this *Heterarthrus* as the other sex of the following one had not the more numerous examples of the *latter* revealed the fact that both males and females (as proved by the construction of their tarsi) are undoubtedly present. Hence I have no choice but to treat the two female individuals from which the above diagnosis has been drawn out as specifically distinct from the *H. pallidipennis*. Regarding this conclusion, therefore, as almost unavoidable, I may add that the *H. Lewisii* is not only larger than its ally, and with appreciably longer legs and antennæ, but that its rostrum likewise is a little more lengthened (with the antennæ implanted just *before*, instead of *at*, the middle point), and its third tarsal joint is just perceptibly more expanded and bilobed. It was taken by Mr. Lewis near Nagasaki, in the island of Kushiu, by beating old hedges.

b. *Antennæ in medio rostri* (*paulo brevioris*) *insertæ. Pedes paulo breviores.*

13. *Heterarthrus pallidipennis*, n. sp.

H. formâ, sculpturâ coloreque ut in specie præcedenti; sed corpus paulo minus, rostro, antennis pedibusque sensim brevioribus, antennis in medio (nec mox ante medium) rostri insertis.

Long. corp. lin. circa 2.

Captus prope Nagasaki, in ins. Kushiu; cum specie precedenti degens.

I have already implied that the present *Heterarthrus* is so like the preceding one that I should have taken it for a mere sexual form of the latter, had I not found a structural difference in the tarsi of the few examples now before me, which would seem to imply that both males and females are undoubtedly indicated; and I am therefore constrained to look upon the *H. pallidipennis* as specifically distinct from the *H. Lewisii*. The former may consequently be defined as being merely a little smaller than its ally, and in having its legs, rostrum, and antennæ appreciably shorter,—the latter, moreover, being implanted more strictly *medially* than ante-medially. Mr. Lewis appears to have captured his specimens, along with those of the last species, out of old hedges, near Nagasaki, in the island of Kushiu.

Genus 11. MACRORHYNCOLUS (nov. gen.).

Corpus fusiformi-cylindricum, angustum, subdepressum, calvum, nitidum, profunde sculpturatum: *rostro* brevi, crasso, lineari, arcuato; *scrobe* antice latâ profundâ brevi auriculiformi, dein subito angulatim deflexâ et usque ad marginem oculi inferiorem currente; *oculis* sat magnis, rotundatis, paulo prominentibus et longe ante marginem prothoracis sitis: *prothorace* elongato-ovato, antice et postice truncato: *scutello* rotundato, valde distincto: *metasterno* elongato: *elytris* parallelis, postice vix attenuatis. *Antennæ* crassæ, pone medium rostri insertæ; *scapo* curvato, gradatim valde clavato; *funiculo* 7-articulato, art.° 1mo reliquis paulo majore, sequentibus subæqualibus, latitudine vix crescentibus, inter se argute divisis sed haud laxis; *capitulo* ovato, apicem versus conspicue 3-annulato. *Pedes* breves, validi, crassi, *antici* ad basin parum approximati, *intermedii* distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* ad apicem externum in uncum acutum, necnon ad internum in spinam minorem productis: *tarsis* breviusculis, crassiusculis, art.^is^ 1mo, 2do 3^tio^que longitudine subæqualibus (nec 1mo elongato), 3^tio^ fere simplici (i.e. vix dilatato, vix bilobo), ult.^mo^ *unguiculis* parvis armato.

Obs.—*Rhyncolo* affinitate proximum, sed differt corpore majore, longiore, ac magis cylindrico, rostro (licet brevi, crasso) conspicue parallelo, nec triangulari, scrobe aliter formatâ, oculis majoribus ac magis prominentibus, antennis pone (nec ante) medium rostri insertis, prothorace longiore, tibiisque (præsertim anticis) ad angulum internum in spinam majorem productis. A *Cossono* differt corpore minore, angustiore, magis fusiformi, rostro breviore latiore ac magis parallelo, oculis omnino rotundatis, antennis pedibusque plus minus brevioribus crassioribus, funiculi articulo secundo nullo modo sequentibus longiore, tarsorumque articulo primo minus evidenter elongato, et tertio sensim latiore ac magis cordato.

A μακρὸς, longus, et *Rhyncolus*.

The four individuals from which the above structural diagnosis has been drawn out might seem at first sight to represent an unusually large and elongate species of *Rhyncolus;* but a more critical examination will show that they cannot be associated with that group. Not to

mention their larger size, more parallel outline, and more elongate prothorax, they differ considerably in the formation of their rostrum, which is neither thick and triangular like that of the typical *Rhyncoli*, nor comparatively slender and linear as in the normal members of *Phlœophagus*, but somewhat intermediate between the two,—being short and incrassated, but nevertheless *conspicuously parallel throughout* (though not quite so short and broad, nor so depressed, as in *Xenomimetes*). Its scrobs, too, is very differently constructed from that of *Rhyncolus*,—being short, deep, wide, and auriculiform at its base, and then suddenly narrowed and bent downwards, at a sharp angle, beneath the eye. In addition to this, its eyes are larger and more prominent than those of the *Rhyncoli* (and the *Phlœophagi*), its antennæ are implanted behind (instead of before) the middle of the rostrum, and its tibiæ are produced at their inner angle into a more distinct spinule. In its thickened antennæ and limbs, and short feet, it is more, perhaps, on the *Rhyncolus* than the normal *Phlœophagus* type.

14. *Macrorhyncolus crassiusculus*, n. sp.

M. angusto-linearis, parallelus, subdepressus, calvus, niger, nitidus; capite argute punctulato rostroque arcuatis convexis, oculis prominentibus; prothorace elongato-ovato, antice et postice truncato, mox pone apicem transversim constricto, profundius punctato, in medio obsolete carinato; elytris profunde arguteque striato-punctatis, interstitiis convexis et minutissime (vix perspicue) uniseriatim punctulatis; antennis pedibusque brevibus crassiusculis, rufo-piceis, illarum capitulo ferrugineo. Subtus sat dense profundeque punctatus.

Long. corp. lin. $1\frac{3}{4}$—$2\frac{1}{4}$.

Captus inter fungos pinosque ad Hiogo, in ins. Nipon, mense Augusto, A.D. 1870.

The black hue and shining (though nevertheless deeply sculptured) surface of this beautiful Cossonid, added to its structural features to which I have above alluded, will suffice to distinguish it from everything else with which we are here concerned. The four examples from which the description has been drawn were taken amongst fir-trees and funguses, by Mr. Lewis, at Hiogo, in the island of Nipon.

Genus 12. Xenomimetes (nov. gen.).

Corpus cylindricum, calvum, dense et profunde sculpturatum: *capite* convexo; *rostro* brevi, lato, sed capite sensim angustiore, et parallelo (nec triangulari), depresso; *scrobe* brevi, profundâ, curvatâ, infra oculum desiliente; *oculis* longe ante marginem prothoracis sitis, rotundatis, valde prominentibus: *prothorace* subcylindrico, pone marginem anticum transversim constricto: *scutello* rotundato, distincto: *metasterno* elongato: *elytris* cylindricis, ad apicem ipsum paulo singulatim divaricatis. *Antennæ* breviusculæ, crassiusculæ, in medio (aut forsan mox ante medium) rostri insertæ; *scapo* recto, leviter clavato; *funiculo* 7-articulato, art.° 1mo subquadrato (reliquis majore, sed haud magno), sequentibus transversis, latitudine paulo crescentibus; *capitulo* abrupto, ovato, apice obscure annulato. *Pedes* validi, *antici* ad basin fere approximati, *intermedii* distantiores, *postici* valde distantes: *femoribus* muticis: *tibiis* subflexuosis (extus quasi paululum excavatis), ad apicem externum in uncum magnum inflexum, necnon ad internum in spinam parvam productis: *tarsis* elongatis, gracilibus, art.° 1mo longiusculo, 3^{tio} fere simplici (i.e. vix dilatato et vix bilobo), ult.^{mo} elongato, graciusculo, *unguiculis* parvis armato.

Obs.—Corpus *Hylurgi* formam simulans, sed rostro, tibiis abdomineque *Cossonidis* omnino congruit. A *Syntomocero* (= *Eremotes*, olim) ac *Stenoscelide* differt, inter alia, rostro (quamvis brevi) conspicue longiore, minus incrassato, et lineari (nec triangulari), antennis aliter constructis, elytrisque ad apicem sensim divaricatis.

A ξένος, extraneus, et μιμητής, imitator.

The facies and sculpture of the remarkable Cossonid from which the above structural diagnosis has been compiled have so much in common, at first sight, with certain *sub*-Curculionideous forms (like *Hylastes*) of the *Scolytidæ*, that it must clearly be regarded as the type of another group in the vicinity of *Eremotes* (or *Syntomocerus*), which infests the pine trees at a high elevation in the Canarian archipelago. Yet its rostrum, although short and broad, is neither *so* short nor so broad as in that genus, and, moreover (instead of being thick and triangular), it is *parallel* and depressed, and appreciably narrower than the head. Its antennæ, also, are very different from what obtains in that group, being less thickened; and there is not that peculiarity, which forms so marked

a feature in *Eremotes*, as regards the diminished (and almost concealed) second funiculus-joint. Its elytra, moreover, are curiously rounded off separately, and subdivaricate, at their apex,—much after the fashion we see in various Apions of the *vernale* type. Yet, in spite of these discrepancies (especially as concerns the breadth and outline of its rostrum), I feel satisfied that its real affinities are more with the particular genus to which I have just called attention, than with the *Rhyncoli;* though since it cannot be admitted into the section of the family, characterized by *Eremotes* and *Stenoscelis*, in which the rostrum is *excessively* abbreviated, thick, and triangular, I have placed it thus far towards the close of the present division.

15. *Xenomimetes destructor*, n. sp.

X. cylindrica, atra, subnitida; capite dense rugulosopunctato, rostro depressiusculo, in medio leviter canaliculato, oculis valde prominentibus, fronte convexâ; prothorace cylindrico, grosse punctato (punctis suboblongis ac longitudinaliter subconfluentibus), carinulâ mediâ lævi instructo; elytris transversim rugulosis, profunde crenatostriatis, regione scutellari desiliente, interstitiis rugulosis ac minutissime subseriatim punctulatis, mox ante apicem utrinque plicato-subconstrictis necnon ad apicem ipsum singulatim divaricatis; antennis rufo-piceis, capitulo ferrugineo; pedibus nigro-piceis, tarsis rufescentioribus. Subtus grosse, sed leviter et vix dense, punctata.

Long. corp. lin. $1\frac{3}{4}$-2.

Capta inter pinos prope Nagasaki, in ins. Kushiu, hinc inde vulgaris.

The deep-black, cylindric, and coarsely, densely sculptured body of this insect, added to its short and broad, yet parallel, rostrum, and its very prominent eyes, will, in conjunction with the various characters to which I have above alluded, abundantly distinguish it from every other member of the *Cossonidæ* with which we are here concerned. It was captured in considerable abundance by Mr. Lewis, on various occasions, amongst old pine trees near Nagasaki, in the island of Kushiu.

Genus 13. Hexarthrum.

Wollaston, Ann. Nat. Hist. v. 448 (1860).

Corpus breviter cylindricum, postice obtuse terminatum, (nisi oculo fortissime armato) calvum, vix nitidiusculum, profunde sculpturatum; *rostro* brevi, angustulo-subtriangulari; *scrobe* fere versus medium oculi ascendente; *oculis* rotundatis sed valde demissis: *prothorace* ovato basi truncato: *scutello* valde distincto: *metasterno* haud valde elongato: *elytris* parallelis, et (oculo fortissime armato) minutissime parcissimeque asperatis. *Antennæ* brevissimæ, glabræ, circa (aut vix pone) medium rostri insertæ; *scapo* brevissimo; *funiculo* 6-articulato, art.° 1mo lato (reliquis multo majore), antice recte truncato, sequentibus brevibus, latitudine paulo crescentibus, inter se arcte adpressis; *capitulo* abrupto, compresso, subrotundato, solido. *Pedes* breves, *anteriores* fere contigui, et etiam *postici* haud late distantes: *femoribus* (præsertim *anticis*) incrassatis, muticis: *tibiis* ad apicem externum in uncum acutum minus curvatum productis: *tarsis* longiusculis, gracilibus, filiformibus, art.° 1mo longiusculo, 3^{tio} simplici (nec dilatato, nec bilobo).

The genus *Hexarthrum* (which, in the size and *facies* of its exponents, has much the *primâ facie* aspect of *Rhyncolus*) is at once remarkable amongst the *Cossonides* for its 6-articulated funiculus, its extremely abbreviated antennæ, and its rather shortly-cylindric outline,—the elytra (which are very minutely and remotely asperated, when viewed beneath a high magnifying power) being obtusely rounded behind. It is also further distinguished by its shortened rostrum and legs, by its first funiculus-joint being wide, and very straightly lopped-off (or truncated) in front, by its club being rounded, compressed, and exceedingly solid, by its four anterior coxæ being very nearly contiguous, by its femora (particularly the front pair) being a good deal thickened, and by its tarsi (the basal joint of which is appreciably elongated, and the third one simple) being slender and filiform. The only species of it which had hitherto been made known occurs at Madeira,—where I have met with it (though very rarely) crawling on the inner walls of houses (where I have little doubt that it fed upon the old planks and rafters), and where the late Mr. Bewicke formerly captured several examples of it amongst decayed, tinder-like

wood in a neglected out-house. I believe, therefore, that its mode of life is very similar to that of *Pentarthrum* and *Mesoxenus;* and if this be the case, I am the less surprised that Mr. Lewis should have detected a second representative of the genus in so distant a region as the Japanese archipelago.

16. *Hexarthrum brevicorne*, n. sp.

H. breviter cylindricum, vix nitidiusculum, piceo-nigrum, et (nisi oculo fortissime armato) calvum; rostro minute et dense punctulato; prothorace ovato basi truncato, dense, valde profunde, et argute punctato; elytris (oculo fortissime armato) minutissime parcissimeque asperatis, grosse sulcato-punctatis (punctis magnis), interstitiis minutissime seriatim punctulatis; antennis (brevissimis) tarsisque piceo-ferrugineis, femoribus tibiisque nigro-piceis. Subtus grosse et profunde punctatum, et (oculo fortissime armato) parce fulvo-sericatum.

Long. corp. lin. $1\frac{1}{3}$.

Captus ad Hiogo, in ins. Nipon.

The present *Hexarthrum* very closely resembles the *H. capitulum*, which has been observed hitherto only in Madeira; it is, however (judging from the single example now before me), a little smaller and darker, its rostrum is not quite so thickened, its limbs are (if anything) even more abbreviated still, its elytra (which, when viewed beneath a high magnifying power, are not quite so appreciably asperate) have their striæ deeper and their punctures somewhat larger; and its first and second abdominal segments are not quite so distinctly separated from each other by a sutural line. The unique example from which the diagnosis has been compiled was captured by Mr. Lewis at Hiogo, in the island of Nipon.

** *Rostrum brevissimum, crassum* (*aut parallelum, aut triangulare*).

Genus 14. Sphærocorynes (nov. gen.).

Corpus subcylindricum, supra fere calvum, subtus breviter pilosum, dense sed haud grosse sculpturatum: *rostro* brevissimo, crasso, sed tamen parallelo (nec triangulari); *scrobe* antice brevissimâ latâ profundâ auriculiformi, dein subito angulatim deflexâ et mox obliteratâ; *oculis* longe ante marginem prothoracis sitis, rotundatis, valde promi-

nentibus: *prothorace* cylindrico-ovato, antice et postice truncato, mox pone apicem leviter transversim constricto: *scutello* subrotundato, valde distincto: *metasterno* elongato: *elytris* subcylindricis. *Antennæ* longiusculæ, crassæ, versus apicem rostri insertæ; scapo elongato, curvato, gradatim valde clavato; *funiculo* 7-articulato, brevi, art.° 1mo subquadrato, vix incrassato, sequentibus brevissimis, latitudine conspicue crescentibus; *capitulo* maximo, rotundato, abrupto, solido, apicem versus obscure annulato. *Pedes* validi, ad basin subæqualiter distantes (nec *antici* minus et *postici* magis inter se separati): *tibiis* (præsertim *anticis*) robustis, et ad apicem externum in uncum magnum deflexum productis: *tarsis* elongatis, latiusculis, pilosis, art.° 1mo elongato. 3^{tio} sensim latiore ac profunde bilobo, ult.^{mo} clavato, *unguiculis* parvis armato.

Obs.—Genus præcipue insignum rostro brevissimo crasso, sed tamen parallelo (nec triangulari), antennis crassis, scapo elongato, funiculo brevi, et capitulo permagno rotundato abrupto, oculis prominentibus, pedibus ad basin subæqualiter separatis (sc. anticis magis sed posticis minus remotis quam in Cossonidis plerisque obtinet), corpore subtus distincte breviter pubescente, tarsisque latiusculis pubescentibus, articulo primo elongato, tertio sensim latiore ac conspicue bilobo.

A σφαῖρα, globus, et κορύνη, clava.

A well-defined genus, which may at once be recognized by the shortness and thickness of its rostrum (which is nevertheless parallel, and not triangular as in *Stenoscelis*), by its thickened antennæ having their scape elongate and very robust, their funiculus short, and their club extremely large, rounded, and abrupt, by its tarsi (the first joint of which is lengthened, and the third bilobed) being rather broad and pubescent, and by the fact of its legs being *subequally* distant at their base,—the anterior pair being less approximated, and the hinder ones more so, than is usually the case in the *Cossonidæ*. And it is further remarkable for its body (which is nearly cylindrical, and with the eyes prominent) being sparingly clothed beneath with a fine and short pile; and for its front tibiæ being somewhat widened, flexuose, and robust, with their apical hook largely developed.

17. *Sphærocorynes Lewisianus*, n. sp.

S. subcylindricus, convexus, supra (nisi oculo fortissime armato) calvus, niger, subopacus; capite prothoraceque

subtilissime alutaceis et dense punctatis, rostro brevissimo, crasso in medio profunde canaliculato, oculis prominentibus, hoc cylindrico-ovato, convexo, in medio obsolete carinato; elytris parallelis, paulo picescentioribus, transversim rugulosis, subpunctato-sulcatis, interstitiis latiusculis convexis (præsertim postice) et argute seriatim punctulatis; antennis tarsisque incrassatis, rufescentioribus, illarum capitulo magno, rotundato, obscuriore, pubescenti; tibiis anticis intus versus apicem fulvo-pubescentibus. Subtus convexus, dense sed leviter punctatus, necnon breviter fulvo-pubescens.

Long. corp. lin. $1\frac{2}{3}$.

Captus prope Nagasaki, in ins. Kushiu, Aprili exeunte A.D. 1870, rarissime.

In addition to the characters to which I have just called attention, the present somewhat *Hylastes*-like Cossonid may be further known by its dark hue, and by its opake and closely, but not very coarsely, sculptured surface (the head and prothorax of which are minutely *alutaceous*, as well as punctured), and by its elytral striæ being deep, but rather lightly punctured, with the interstices broad in front, narrower and more convex behind, transversely rugulose, and branded with a longitudinal row of very distinct punctules,—a type of sculpture with which we are very familiar in certain members of the *Hylesinidæ*. Two examples of it were beaten by Mr. Lewis, "out of brushwood," near Nagasaki, in the island of Kushiu, on the 22nd of April, 1870.

Genus 15. Stenoscelis.

Wollaston, Journ. of Ent. i. 141 (1861).

Corpus ovato-cylindricum, crassiusculum, calvum, grosse sculpturatum, postice etiam asperatum, *Hylastes* aut *Dendroctonus* primâ facie simulans: *capite* subgloboso, crasso; *rostro* brevissimo, subtriangulari, crasso; *scrobe* fere nullo (antennis ad basin in impressione brevi mox ante medium oculi insertis); *oculis* magnis, rotundatis, sed omnino demissis: *prothorace* breviter subcylindrico-ovato, antice et postice truncato, pone apicem transversim constricto: *scutello* minutissimo, punctiformi: *metasterno* haud valde elongato: *elytris* ovato-cylindricis, postice obtuse desilientibus et asperatis: *abdominis* segm.^{tis} 1mo et

2do magis evidenter separatis quam in Cossonidis typicis, necnon inter se subæqualibus. *Antennæ* brevissimæ subgraciles, prope medium rostri brevissimi insertæ ; *scapo* brevissimo, clavato ; *funiculo* 7-articulato, art.° 1mo magno, lato, transverso-quadrato, sequentibus (a 2do parvo, brevissimo, transverso) longitudine paulo sed latitudine valde paulatim crescentibus, inter se argute separatis, ult.^mo^ ad *capitulum* magnum solidum subglobosum haud arcte applicato. *Pedes* subgraciles, *anteriores* ad basin approximati, *postici* parum (sed haud valde) distantes : *femoribus* muticis : *tibiis* rectis, subgracilibus, ad apicem externum in uncum magnum deflexum elongatum productis : *tarsis* longissimis, gracilibus, art.° 1mo elongato, 3^tio^ reliquis vix latiore sed evidenter minute bilobo, ult.^mo^ elongato, clavato, *unguiculis* magnis armato.

Obs.—Formâ generali breviter ovato-cylindricâ, rostro brevissimo crasso subtriangulari, scrobe nullo, elytris postice obtuse desilientibus necnon ibidem etiam asperatis, coxisque anterioribus approximatis genus inter *Cossonidas* anomalum, et *Hylastes*, aut potius *Dendroctonus*, Scolytidarum, primâ facie simulans. Præterea conspicuum est corpore calvo, crasso, rugose sculpturato, oculis magnis sed omnino demissis, antennis brevissimis, scapo præcipue brevissimo, funiculi articulo primo magno, transversim quadrato, reliquis (a 2do minutissimo, transverso) gradatim conspicue latioribus, capitulo magno rotundato solido, metasterno haud valde elongato, etiam coxis posticis haud late separatis, pedibus subgracilibus, tarsisque (longissimis) præcipue gracilibus, art.^is^ 1mo et ult.^mo^ elongatis, hoc *unguiculis* magnis munito.

The unique example from which I have drawn the above structural characters is one of the most important and interesting of all the Japanese *Cossonidæ* which were collected by Mr. Lewis, as supplying a second representative of a remarkable group which has hitherto been observed only at St. Helena and the Cape of Good Hope ; and it is the nearest true member of the *Rhyncophora* (as yet made known) to the closely-allied Hylastideous forms of the *Scolytidæ*,—its somewhat short, ovate-cylindric outline, and excessively abbreviated, thick, subtriangular rostrum, in conjunction with its obsolete scrobs, its approximated four anterior coxæ, and the fact of its elytra being rather obtusely-shortened, or bent down, behind, where they are besprinkled with tuberculiform asperities,

being strongly suggestive, at first sight, of such groups as *Hylastes* and *Dendroctonus*. In other respects it may be known by its bald, but coarsely sculptured, surface; by its eyes being large, yet entirely sunken or depressed; by its antennæ being excessively short (more particularly as regards the scape, which projects very little beyond the lateral edge of the rostrum), with their first funiculus-joint large and transverse-quadrate, whilst the rest are very abbreviated, though increasing gradually (from the excessively minute basal one) in breadth, and with their club rounded, solid, and abrupt; by its metasternum and first abdominal segment being less elongated than is usual amongst the *Cossonidæ;* by even its *hinder* coxæ being but slightly separated; by its legs being rather slender, with their tibial hooks elongate and powerfully developed; and by its tarsi being likewise much lengthened, but at the same time extremely thin,—with the basal and apical articulations comparatively long, the third one hardly at all expanded, but nevertheless minutely bilobed, and the claws very conspicuous.

18. *Stenoscelis gracilitarsis*, n. sp.

S. ovato-cylindricus, convexus, calvus, niger, subnitidus; capite rotundato, crasso, dense punctulato, punctis in rostro (brevissimo, subtriangulari) longitudinaliter subconfluentibus, oculis omnino depressis; prothorace breviter subcylindrico-ovato, pone medium ad latera rotundato-ampliato sed tamen ibidem sinuato, profunde et grosse (sed vix densissime) punctato, paululum malleato-inæquali; elytris ovato-parallelis, vix picescentioribus, profunde et grosse crenato-striatis, interstitiis latis, costato-elevatis et minute seriatim punctulatis, necnon versus apicem (obtuse-desilientem) tuberculis parvis parce asperatis, regione scutellari desiliente; antennis tarsisque gracilibus, picescentioribus, illis brevissimis, his elongatis. Subtus grosse punctatus.

Long. corp. lin. $1\frac{3}{4}$.

Captus (semel tantum) in pino quodam antiquo, Augusto A.D. 1870, ad Hiogo, in ins. Nipon.

Although in its *generic* details unmistakeably identical with the *Stenoscelis hylastoides*, from St. Helena and the Cape of Good Hope, the present insect is a little blacker and less picescent than that species, its prothorax is not only more shining but *very* much more deeply and coarsely

(and not so closely) punctured, and the sculpture of its elytra (which have their region immediately surrounding the scutellum depressed into a sort of abbreviated, posteriorly-evanescent channel) is quite different,—their striæ (instead of being obsolete) forming deep crenated grooves, with the interstices consequently (although broad) costate and convex; and there is no appearance of the coarse transverse *rugæ* which roughen their anterior half in that insect. The underside moreover is *very* much more grossly punctured, with the first abdominal segment a trifle shorter (it being subequal in length to the second); and its antennæ are even still more abbreviated than those of the *S. hylastoides* (particularly as regards their scape), with the first funiculus-joint broader and shorter, and the remaining six gradually more widened and transverse, whilst the capitulum is perhaps (if anything) even larger, and more rounded and abrupt.

The unique specimen from which the description has been compiled was taken by Mr. Lewis, during August, 1870, off an old fir-tree at Hiogo, in the island of Nipon.

III. *The* Water Beetles *of Japan.*

By David Sharp, M.B.

[Read 6th January, 1873.]

My object in this paper is to enumerate the species of Dytiscidæ and Hydrophilidæ found by Mr. George Lewis in Japan. To enable me to do this Mr. Lewis has entrusted me with the whole of the specimens belonging to these families, captured by him during his residence in the Japanese islands. To the students of the European fauna these Japanese insects are of very great interest: the number of species common to Europe and these far distant islands is by no means inconsiderable; other European species are represented in Japan by closely allied forms, and some of our larger genera possess there numerous species. Mingled with these European forms we find a large proportion of quite Eastern genera and species. It must be remembered that we know comparatively little of the beetles of central and eastern Asia, especially of those parts contiguous to the Japanese islands, so that at present we are not in a position to form any correct opinion as to what proportion the European forms bear to the eastern ones in these parts. It will probably, however, ultimately be found that the faunas of the eastern and western portions of the old world gradually merge into one another, and should really be considered but as one fauna. The species here enumerated belong to twenty-five genera, of which three are unrepresented in the European or Mediterranean fauna; these three are all genera of a wide distribution.

Dytiscidæ.

1. *Cybister japonicus*, n. sp. Sat convexus, latior, ovalis postice dilatatus, supra nigro-olivaceus, capite antice, prothoracis lateribus, vittâque longitudinali versus elytrorum marginem testaceis; subtus testaceus, pectore medio late olivaceo, suturis, abdominisque segmentis anguste nigro-marginatis.

Long. 18 lin.; lat. $9\frac{1}{2}$—10 lin.; alt. $5\frac{1}{3}$ lin.

Mas, prothorace elytrisque lævibus.

Fem., prothorace reticulato-strigoso, elytris excepte ad apicem reticulato-striatis.

This species is closely allied to the European *C. Rœselii;* the sculpture of the female is very similar in the two species. *C. japonicus* is considerably larger, broader, and more convex; the upper surface is less green in colour than in *Rœselii*. The large and well defined dark mark on the breast, and the dark sutures of the under surface, are also good points of distinction. In the female the dilatation of the epipleuræ of the elytra near the base is very remarkable, and much greater than in *Rœselii*. Abundant* throughout Nipon and Kushiu.

2. *Cybister Lewisianus*, n. sp. Convexus, ovatus, antice minus angustatus, supra olivaceus, labro lateribusque prothoracis et elytrorum testaceis; subtus rufo-testaceus, pectoris marginibus anguste nigricantibus; pedibus testaceis, tarsis intermediis, tibiis tarsisque posterioribus nigro-piceis. Long. 11 lin.; lat. 6 lin.: alt. $3\frac{3}{4}$ lin.

Mas, prothorace elytrisque lævibus.

Femina latet.

This species is not at all closely allied to any described species I am acquainted with; it belongs to Aubé's section b, having the sides and epipleuræ of the elytra yellow, without any intersecting dark colour. The antennæ are yellow, with the four or five apical joints pitchy, except at their extremities. Palpi yellow, with the apical joint a little darkened. Head of a dark olivaceous colour, with the labrum, and a broad triangular mark above it, yellow; the orbit of the eyes is also yellow, narrowly so behind, but at the front part, where it is connected with the other yellow mark, broadly so; it appears to be quite smooth and shining, but, when examined with a strong magnifying power, is found to be very finely coriaceous, and to have other larger, fine points sparingly scattered over it. The thorax is broadly margined with yellow; it has the usual punctures at the sides and front, and is sculptured in a similar manner to the head, but the fine scattered points are even smaller and less numerous. The scutellum is yellowish in the middle. The elytra are of a dark olivaceous colour, with a bright yellow margin; this stripe is a little dilated at the extreme base; it is narrowed in its posterior third, and a little before the extremity are a few

* I am greatly indebted to Mr. Lewis for enriching this paper with information as to the localities, and rarity or abundance of the species mentioned in it.

obscure yellow points not distinctly connected with the stripe. The three usual lines of punctures are very distinct, the external row less so than the two others; the two or three basal points of the external row are placed in the yellow lateral stripe, the three or four following ones just at its edge. The underside of the head is pitchy red, with the parts of the mouth yellowish. The prosternum is reddish-yellow; the front legs are entirely yellow; the middle of the breast is reddish; the intermediate portion yellow; the extreme outer margin (very narrowly) black. The middle legs are yellow, with the tibiæ slightly darker than the femora; their tarsi pitchy black; their outer claw larger than the inner one. The abdomen is reddish; the hind margins of the segments narrowly pitchy; the extreme sides also a little pitchy, and the basal segments with a pale spot at the sides. The hind femora are reddish; the tibiæ and tarsi pitchy black; the spurs of the former reddish.

The much more convex form, and the different colour of the insect beneath, will prevent this species being confounded with any of the forms of *C. tripunctatus*. It is also very different in form from *C. scutellaris*, from which morever the unequal claws of the intermediate tarsi readily separate it (as far as the male sex is concerned, at any rate). A single specimen only has been found, at Mino, near Osaka.

3. *Cybister tripunctatus*, Ol. Abundant in Nipon and Kushiu. These Japanese specimens cannot be considered specifically identical with our European *C. africanus*, which is now considered a form of *tripunctatus;* they may indeed ultimately prove to be a distinct species from any yet described; but it would be premature to consider them so at present, so much yet remaining to be done for the accurate discrimination of these difficult and variable species.

4. *Cybister brevis*, Aubé. Abundant in Nipon and Kushiu. This species was described by Aubé from a single female individual. He supposed the male would not possess the remarkable punctuation on the head and thorax which he described in the female; but in this he was wrong, the sexes are similar in every external point except the structure of the tarsi.

5. *Hydaticus Adamsi*, Clark. Rather rare; under

stones on Mitsuyama, Nagasaki, and from ponds at Osaka. This species has been identified by Mr. Lewis, by comparison with specimens in the British Museum.

6. *Hydaticus vittatus*, Fab. Very common in Kushiu and Nipon. It is quite probable that several closely allied species are confounded under the name of *vittatus*. We must wait, however, till series of individuals from various localities can be examined before deciding this point.

7. *Hydaticus rufulus*, Aubé. Nagasaki and Hiogo. This species is united in the Munich catalogue with our European *H. Leander*, but I entertain doubts as to the correctness of this.

8. *Hydaticus grammicus*, Germ. Nagasaki.

9. *Hydaticus japonicus*, n. sp. Breviter ovatus, convexus, capite prothoraceque testaceis, nigro signatis, elytris nigricantibus flavo-irroratis; subtus nigro-piceus, prothoracis lateribus, prosterno, pedibus quatuor anticis epipleurarumque basi testaceis, pedibus posterioribus nigris femoribus flavo-ornatis. Long. $5\frac{3}{4}$—$6\frac{1}{2}$ lin.; lat. $3\frac{3}{4}$—4 lin.

Mas, tarsis anticis et intermediis dilatatis.

This species will be best described by a comparison with *H. cinereus*, to which it is closely allied. The colouring of the upper surface is just the same as in *cinereus*, but beneath, *japonicus* is very much darker, and the form of *japonicus* is very much shorter than that of *cinereus*.

The female differs from the male by its simple tarsi, by possessing a few obscure lines or strigæ near the sides of the thorax, and also by the yellow band of the middle of the thorax being narrower than in the other sex.

Very abundant in the fens of Osaka and the ponds of Hiogo.

10. *Colymbetes pulverosus*, Steph. Widely distributed and abundant.

11. *Agabus conspicuus*, n. sp. Latior, ovatus, convexus, supra subtiliter reticulatus, capite prothoraceque nigro-æneis, illo maculis duabus rufis, elytris fuscis, marginibus dilutioribus; subtus subtiliter strigosulus, niger. Long. $5\frac{1}{2}$ lin.; lat. $3\frac{3}{8}$ lin.

Mas, unguiculis anticis longitudine subæqualibus, an-

teriore (vel interiore) leviter dilatato ante basin emarginato.

This very distinct and interesting *Agabus* is allied to both *A. bipustulatus* and *fuscipennis*, while in the structure of the claws of the hind feet it makes an approach to *Ilybius*. It is readily distinguished from *fuscipennis* by the larger size and the rounded base of the thorax, as well as by the distinct reticulation of the elytra. It is broader and more rounded at the sides than is *A. bipustulatus*, and the reticulation of its upper surface is quite different from that species, being much finer, and the direction of the lines transverse rather than longitudinal; the sculpture of the under surface much resembles that of *bipustulatus*. The shape of the lateral laciniæ of the metasternum is rather close to that of *A. fuscipennis*, but the depth of the hind coxæ is considerably more than in *fuscipennis*; this arises both from their upper margin being more strongly arched, and their lower margin more transverse (that is, less oblique in direction) than in *fuscipennis*. The claws of the hind tarsi are closely applied to one another, and almost straight, the outer one is evidently smaller than the inner one; the disparity, however, is much less than in *Ilybius*. The species is rather variable in its colour.

Osaka and Nagasaki. Common.

12. *Agabus* (*Platambus*, Th.) *pictipennis*, n. sp. Ovalis, supra nitidissimus, nigricans, capite maculis duabus, antennis pedibusque rufis; elytris basi fasciâ ad scutellum interruptâ et utrinque versus latus maculis tribus pallidis; prothorace angulis posterioribus subacutis; subtus ferrugineus. Long. $3\frac{1}{2}$ lin.

Mas, tarsis anticis vix dilatatis, unguiculis simplicibus.

This species has all the structure assigned by Thomson to the genus *Platambus*. It is readily distinguished from *A. maculatus* by the shining and nearly unsculptured upper surface, as well as by the different markings; in this latter respect it appears more allied to *A. sinuatus*, Aubé (from Asia Minor), a species which I have not seen, but which, judging from description, should be similar in sculpture to *maculatus*, and therefore very different from *pictipennis*; *sinuatus* has, moreover, at the sides of the elytra a continuous pale band instead of the three spots of

pictipennis. The colour, both of the upper and under surfaces, varies according to the degree of maturity.

Four specimens from Hiogo, under stones in the water-courses.

13. *Agabus japonicus*, n. sp. Ex affinitate *A. paludosi:* ovalis, supra nitidus, lævis, capite prothoraceque nigro-æneis, elytris fuscis: subtus niger. Long. $3\frac{1}{2}$—$3\frac{3}{4}$ lin.

Mas, tarsis anticis vix dilatatis, unguiculis æqualibus simplicibus; tarsis posterioribus articulis tribus basalibus subtus minus dense setigeris.

This species is closely allied to *A. paludosus;* it is broader and more rounded at the sides, the thorax is of an obscure brassy colour, and not paler at the sides, and its hind angles are more acute; the impressed points on the elytra are finer.

The underside is black, with the epipleuræ pale at the base. The antennæ and palpi are reddish-yellow, the four front legs are reddish, with the femora infuscate; the femora and tibiæ of the hind legs are blackish, their tarsi reddish. The structural characters of the male are similar to those of *paludosus*.

Hiogo and Nagasaki.

14. *Agabus dissimilis*, n. sp. Ex affinitate *A. spilopteri*, Germ.—Late ovalis, depressus, niger, nitidus, subtilissime reticulatus; capite, prothoracis maculâ ad angulum anteriorem, antennis, pedibusque quatuor anticis rufo-testaceis; pedibus posterioribus piceis. Long. $2\frac{1}{2}$ lin.; lat. $1\frac{1}{2}$ lin.

Variat, elytris plus minusve testaceo-ornatis.

This insect has more the form of a large *Laccophilus* than of an *Agabus*. It is allied to *A. spilopterus*, Germ. It is very shining, the upper surface is finely reticulate, the head is yellowish, the part adjacent to the inner margin of the eye broadly marked with black. The thorax has a large yellowish mark at the front angle. The elytra are also marked with yellow, but apparently in a very variable degree; there being either a narrow yellow transverse band close to the base; or this is absent, and replaced by one or two small pale dots; just in front of the apex there is always a yellow spot, and the parts towards the sides and the extremity show also some obscure and

variable yellow marks. The lateral laciniæ of the metasternum are extremely narrow.

Three examples of this interesting species have been submitted to me by Mr. Lewis, without particular locality being indicated.

15. *Copelatus*, spec. ? There are two specimens of this genus in the collection, one male (from Osaka), one female (from Nagasaki); I have been unable to satisfy myself that they are certainly the same species, and I do not therefore describe them. Mr. Lewis feels sure they are distinct species, and I think it very likely to prove so.

16. *Ilybius apicalis*, n. sp. Oblongo-ovalis, supra æneus, margine pallescente ante apicem trihamato; subtus ferrugineus; metasterni laciniis perangustis. Long. $4\frac{1}{3}$ lin.; lat. $2\frac{1}{4}$ lin.

This species resembles in form *I. fuliginosus*, but is readily to be distinguished by the band of the elytra, which has a large treble spot attached to it at the extremity, and by the very different shape of the side wings of the metasternum. The upper surface is brassy, with the front of the head, the sides of the thorax and elytra yellowish; the pale band of the elytra is divided in its posterior part by a darker line, and a little behind the middle there is close to the band a short pale dash; the sculpture of the upper surface is very fine and dense. The under surface is of a rusty colour, the antennæ and legs reddish-yellow. The anterior margin of the hind coxæ is very much extended forwards, more so even than in *fenestratus*.

The structure of the claws in the male does not differ from that of the female; the outer claw of the hind foot is slender and but little curved.

Ponds in sandy districts. Hiogo and Simabara. Rare.

17. *Hydrocanthus politus*, n. sp. Ovalis, nitidus, lævis, testaceus, elytris fuscis, testaceo-maculatis; prosterno pectorisque parte elevatâ fortiter punctatis. Long. $1\frac{1}{4}$ lin.

Entirely shining yellow, with the exception of the elytra, which are blackish, but largely marked with yellow; these markings consist of two very large yellow spots at the base, and a transverse band placed a little behind the middle and interrupted at the suture, the extremity also

is pale. The upper surface is very shining and quite without sculpture, while the whole of the raised portion of the under surface is strongly punctured.

Common in ponds at Hiogo.

18. *Noterus japonicus*, n. sp. Convexus, brevior, nitidus; elytris fere sine punctis majoribus impressis. Long. 2 lin.

Mas, antennis subsimplicibus; articulo 5° vix incrassato, 8-10 angulo externo superiore acuto.

Closely allied to *N. lævis;* just a little shorter and more convex than that species, and with the punctures of the elytra not quite so fine. The structure of the antennæ in the male is, however, very different from that of *N. lævis*. They appear at first sight not to differ in the two sexes, but when a careful examination is made it is found that the antenna of the male is a little broader than that of the female, and that its fifth joint is just a little produced inwardly, and that joints 8—10 have each the upper and outer angle distinctly acuminate and a little produced.

Common at Nagasaki.

19. *Laccophilus Lewisius*, n. sp. Formâ et staturâ fere *L. testacei;* testaceus, elytris nigro-lineatis, lineis haud flexuosis, aliquantum interruptis ut maculæ pallidæ ad basin et ad marginem videantur. Long. $2\frac{1}{4}$ lin.; lat. $1\frac{3}{4}$ lin.

About as long as *L. testaceus*, but just a little narrower and more convex than that species. The maxillary palpi are yellow, pitchy at the extremity; the antennæ are yellow, with the last joint pitchy, and each of the three or four penultimate joints is a little clouded at the apex. The head is yellow and unspotted. The thorax is yellow, the front margin in the middle and the hind margin have an extremely short (i. e. in the longitudinal direction of the thorax) black mark; the front one does not extend quite to the inner margins of the eyes, the hind mark is not well limited in its lateral extension; the base of the thorax in the middle is formed as in *L. testaceus*. The elytra are yellow, much marked with black; the black marks consist of three or four pairs of lines, the lines forming each pair meeting together a little before the base; externally, and also towards the extremity, these lines are connected with some other more or less linear markings, and the whole of these dark marks are so disposed and interrupted as to give an appearance of the elytra pos-

sessing some yellow spots; these spots being—one on each elytron near the suture at the base, three large ones at each outer margin, and the extremity of the two wing-cases. The reticulation of the upper surface is much more evident than in *L. testaceus*.

A single specimen of this pretty species has been taken at Kobé, by Mr. Lewis.

20. *Laccophilus flexuosus*, Aubé. Common at Nagasaki. This species was described by Aubé from India. Though I have not seen any individuals from that country, I possess specimens from Persia agreeing with Aubé's description, and these I consider the same species as the Japanese individuals.

21. *Laccophilus difficilis*, n. sp. Ovalis, pallidus, elytris paulo obscurioribus, antennis palpisque apicibus nigro-fuscis; prothorace basi medio sat acute producto. Long. 2 lin.

This species is greatly allied to our European *interruptus*, *testaceus*, and *obscurus;* the base of the thorax in the middle is rather more pointed than in *interruptus* or *testaceus*, rather less than in *obscurus;* from *interruptus* its unspotted elytra and the dark extremity of the palpi and antennæ, from *testaceus* the latter character, and its smaller size and rather narrower form, and from *obscurus* its shorter and broader form, will also distinguish it; our European *obscurus* has the extremity of the palpi and antennæ darkened in only an obscure degree, while this character is very conspicuous in the Japanese insect. An examination of the underside shows that the length of the dilated portion of the hind coxæ is, in proportion to their width, much less than in *obscurus*.

Common at Nagasaki.

22. *Laccophilus kobensis*, n. sp. Ovalis, testaceus, elytris obscure fuscis, basi margineque sat distincte testaceo-maculatis; prothoracis basi medio minus acute producto. Long. $1\frac{2}{3}$ lin.

This species is smaller than either *L. interruptus* or *obscurus*, and is more allied to the former than the latter; it is somewhat similar in colour to *L. interruptus*, but the spots are not quite so distinctly limited, and the angle of the base of the thorax is just a little more acute. The much less acute angle of the base of the thorax, the much shorter

and more rounded form, and the more distinctly spotted elytra, will prevent its being confounded with *L. obscurus*.

Probably common at Kobé (Hiogo).

23. *Hyphydrus japonicus*, n. sp. Rufo-testaceus, capite, prothorace, elytrisque nigro-variegatis. Long. $1\frac{1}{8}$—$2\frac{1}{3}$ lin.

Mas.—Nitidus fortiter punctatus.

Femina.—*a*, opaca obsolete punctata.

b, ut in marem nitida et punctata.

This species is closely allied to *H. variegatus*. It is, however, rather smaller, proportionally a little broader, and more acuminate both in front and behind; the black markings are similar to those of *H. variegatus*, but leave a larger portion of the upper surface yellow. The punctuation is not so dense as in *variegatus*, and is more distinctly divided into large and small punctures. I am not aware that in *variegatus* a male-like form of the female has been obtained, but in *japonicus* the two appear to occur in about equal abundance.

H. japonicus is variable in size, in the extent of the black markings of the head and thorax, and also in the sculpture of the upper surface, but none of the varieties I have seen could at all be united with *variegatus*.

Common at Nagasaki and Hiogo.

24. *Hydroporus japonicus*, n. sp. Ex affinitate *H. minutissimi*.—Elongato-ovalis, subdepressus, supra rufo-testaceus, capite prothoraceque basi plus minusve infuscatis; elytris distincte punctulatis, fasciis longitudinalibus plus minusve coalescentibus nigris; subtus piceus. Long. 1 lin.

This little insect belongs to the same section of the genus as *minutissimus* and its allies; it has a deep impressed mark on each side of the thorax, and this is continued on the basal part of the elytra. The antennæ are pitchy, largely yellow at the base. The head is yellowish. The thorax is yellowish with the base clouded in the middle, and with the dark part sparingly but distinctly punctured; the impressed lines are deep; it is a little rounded at the sides, its outline not continuous with that of the elytra; it is nearly as broad at the front angles as at the hind ones. The elytra are scarcely broader at their base than the thorax; they are a little rounded at the sides and pointed behind; they are of a yellowish colour, but much marked with black; the suture, a transverse band at the base, an

elongate mark, not united with the sutural one except near the base, a mark below the shoulder, and another one behind this near the outer margin, black; they are rather strongly punctured on the disc. The legs are yellow. The under surface is blackish, with the breast red in the middle.

Abundant at Nagasaki.

25. *Cnemidotus intermedius.* Latus, testaceus, indistincte nigro-maculatus, elytris fortiter striato-punctatis; laminis coxarum fortiter punctatis, apice valde et acute dentatis. Long. $1\frac{3}{4}$ lin.

Closely allied to *C. cæsus* and *rotundatus*, and in form intermediate between the two; easily distinguished from either by the much more closely punctured ventral plates, and the large and very pointed tooth at their extremity. Thorax with a few punctures near the hind angles, some finer ones about the front, and an irregular row of larger ones along the base, this row terminating some distance from the sides by two or three larger punctures placed close together. Elytra yellow, with five or six indistinct black spots, punctate-striate, the punctuation very coarse at the base and fine at the extremity; the punctures black, the first of each row very large and deeply impressed.

Abundant at Nagasaki.

26. *Haliplus japonicus*, n. sp. Rufo-ferrugineus, capite infuscato, prothorace basi utrinque impresso, elytris fortiter striato-punctatis, fusco-lineatis. Long. $1\frac{1}{2}$ lin.

Allied to *H. ruficollis* and about the same size, but scarcely so broad at the shoulders; the punctures of the striæ of the elytra much larger, the first puncture of the third, fourth, and fifth rows from the suture distinctly larger than the rest, the head infuscate and the elytra unspotted. It is not likely to be confounded with any other species I know.

Two specimens from Nagasaki.

Gyrinidæ.

27. *Gyrinus japonicus*, n. sp. Ovalis, convexus, supra chalybeo-niger, lateribus ænescens, elytris æqualiter punctato-striatis, punctis apice subtilioribus; subtus niger, prothoracis et elytrorum margine inflexo æneo-ferrugineo. Long. $2\frac{2}{3}$—$3\frac{1}{2}$ lin.; lat. $1\frac{3}{5}$ lin.

Allied closely to our European species *marinus* and *Suffriani*. It is rather broader and more convex than *marinus*, and it differs from it by the punctures of the striæ, which become finer towards the extremity, and also by the absence in both sexes of the fine sculpture of the upper surface which is so distinct in the females of *marinus*. It is more nearly allied to *Suffriani*, and it much resembles that species in the punctuation of the elytra, but it is so much larger and broader that the two cannot be confounded. The internal striæ of the elytra are quite distinct, but they are a little finer than the lateral ones. The claws of the tarsi are red and unspotted; the inflexed margin of the prothorax is reddish; the epipleuræ of the elytra are æneous, a little rufescent in the middle in their basal half; the femora of the four hinder legs are pitchy in the middle.

Abundant at Hiogo and Nagasaki.

Obs.—Besides the specimens described above, I have seen two other specimens (♂ and ♀) of a *Gyrinus* from Japan (one in Mr. Lewis's collection from Nagasaki, and one from another source in my own). They may prove to be a distinct species from the above, being considerably smaller, having the inflexed margin of elytra and thorax red, and the femora entirely red. I should like to see more specimens to confirm their claim to be considered a distinct species. It is possible they may be the species intended by Motschoulsky under the name of *G. curtus*, but I have not been able to consult his description.

28. *Dineutes marginatus*, n. sp. Ovalis, supra metallescens, flavo-limbatus, subtus cum pedibus testaceus, elytris quadrispinosis, spinis internis externis haud longioribus. Long. 4—4½ lin.; lat. 2⅓—2½ lin.

Mas abdomine simplice.

Fem., abdomine segmento 2° medio valde rotundato-producto.

Allied to *D. spinosus*, Aubé, but larger and broader, and with the internal tooth on each elytron not broader than the external one. The upper surface is metallic, with a yellow margin extending from the front of the thorax to the first tooth of the elytra; internal to this is a greenish stripe, and inwards from this two dark purplish coppery stripes, these stripes being separated from one another by obscure striæ; at the base, near the suture, there are also traces of two of these dark copper stripes:

when well examined, the elytra are found to possess traces of a sparing and obsolete scattered punctuation. Each elytron is armed near the extremity with two sharp moderately long spines, one placed quite at the extremity near the suture, the other at the side at a five or six times greater distance from the suture. The under surface, as well as the legs, is entirely pale yellow.

Abundant in Nipon and Kushiu. I also possess specimens of this species from Mantchuria.

Hydrophilidæ.

29. *Hydrophilus cognatus*, n. sp. Ovalis, nigro-olivaceus; palpis antennarumque basi testaceis, harum clavâ fuscâ; elytris suturâ spinâ apicali minutâ instructis; abdomine segmentis medio carinatis. Long. 17—18 lin.; lat. 9 lin.

Mas, tarsis anterioribus articulo 5°, precedente paulo latiore.

This species is greatly allied to our European *H. piceus*, but is quite distinct therefrom; it is about the size of *aterrimus;* it has a minute spine at the extremity of the elytra, as in *piceus*, and all the segments of the abdomen are carinated along the middle. The sternal spine is deeply canaliculate in front, and again before the extremity; the portion projecting over the base of the abdomen is unmistakably shorter than in *H. piceus;* this character, with its smaller size, will enable the female to be distinguished from that of *H. piceus;* the male cannot be confounded with *H. piceus*, the slightly dilated joint of the front tarsi and the comparatively small and less unequal unguiculi being very different from our European species.

Abundant in Nipon and Kushiu.

I possess this species from China and Formosa. I have not been able to see Motschoulsky's description of *H. acuminatus* from China.*

30. *Hydrophilus japonicus*, n. sp. Anguste-ovalis, minus convexus, supra viridi-olivaceus, plus minusve metallescens; elytrorum sutura apice denticulâ minutâ; palpis antennisque rufis; subtus niger, abdomine lateribus fulvo-maculato; processu sternali elongato; abdomine

* Since this was written I have seen the description referred to, and consider it inapplicable to either of the two species of *Hydrophilus* here described. D. S.

toto pubescente, segmentibus basalibus medio minus evidenter angulatis, segmento anali omnino ecarinato. Long. 12 lin.; lat. 5—5½ lin.

Mas, tarsis anterioribus apicem versus leviter dilatatis, unguiculis sat elongatis magis curvatis.

This species belongs to a group differing materially from *H. piceus* and its allies by the entirely pubescent abdomen; the species of the group form a gradual passage to the genus *Temnopterus* of Solier. The outlines of this insect are more continuous than in *piceus:* the maxillary palpi have the apical joint shorter than in *piceus*, and a little truncate at the extremity: the sculpture of the elytra does not become more distinct towards the extremity: the extreme apex of the elytra is not truncate, but in each it is just a little separately rounded, and the suture has a minute denticle. The sternal keel is strongly channelled, and projects backwards nearly as far as the hind margin of the third abdominal segment. The segments of the abdomen, except the apical one, are a little carinate, or rather angulate, in the middle. The legs are pitchy black; the hind femora sometimes reddish.

Rare; found at Ipongi, near Nagasaki, in paddy fields. I possess a very closely allied species from Mantchuria, and some other allied species from the Philippines; these latter have the abdominal segments in the middle furnished with some sparing setæ.

31. *Hydrochares affinis*, n. sp. Ovatus, sat convexus, niger, nitidus, palpis, antennis pedibusque rufo-testaceis, his femoribus basi nigris; abdominis segmentis lateribus rufo-maculatis, femoribus posterioribus subtus lævigatis. Long. 8½ lin.; lat. 4⅓ lin.

Closely allied to our European species *caraboides* and *flavipes;* it is of the same size and form as *H. caraboides*, and has the punctuation of the upper surface similar, but it is distinguished therefrom by the red legs, and the impunctate hind femora; from *H. flavipes* it is distinguished only by its larger size and broader form, and by the fact that in *H. affinis* the striæ of the elytra are quite distinct, though very fine, whereas they are very nearly absent in *flavipes*.

I have seen only two specimens of this species; one of them, very soft and immature, has the upper surface olivaceous, the other is black.

Found in a pond at Hiogo.

32. *Hydrochares flavipes*, Stev. var. A single specimen found at Nagasaki is so close to our European *H. flavipes*, that I think it may perhaps prove a mere variety thereof.

33. *Sternolophus fulvipes*, Mots.?* A species of *Sternolophus* is common in Nipon and Kushiu; though I have not been able to see Motschoulsky's description of *S. fulvipes*, I think it so likely that this insect is what he intended thereby that I do not describe it as new.

34. *Philhydrus japonicus.* Ovalis, convexus, nitidus, niger, palpis, antennis basi, clypeo maculâ utrinque, et prothoracis elytrorumque lateribus testaceis, pedibus piceis, tarsis dilutioribus; crebre sat fortiter punctatus, elytris obsoletissime striatis, seriebus tribus punctorum majorum. Long. 3 lin.; lat. $1\frac{3}{5}$—$1\frac{2}{3}$.

Rather larger and notably broader than *P. testaceus.* Palpi yellow. Head black, with a narrow, but distinct, yellow spot on each side in front of the eye; closely and rather strongly punctured. Thorax black, with the sides very distinctly yellowish, the yellow colour also extending along the front margin, so that the extreme front margin is pale; the pale colour also extends inwards along the hind margin, but more indistinctly; closely and distinctly punctured, on each side with some larger punctures forming a not very distinct horse-shoe curve. Elytra black, distinctly margined with yellow, rather strongly and closely punctured, the punctures not quite so numerous at the extremity as at the base; they have a sutural stria abbreviated at the base; they also present indistinct traces of being striate-punctate, and moreover have three series of larger punctures, of which the outer is not so well defined as the other two. Beneath the femora are black and pubescent, except the extremity, which is reddish and impunctate. The tibiæ are pitchy; the tarsi yellowish. The mesosternal carina strongly elevated, acuminate below.

Nagasaki.

35. *Philhydrus simulans*, n. sp. Ovalis, sat convexus, supra testaceus, capite postice nigro; sat crebre fortiter punctatus, elytris fortiter striatis, striis internis basi obsoletis, interstitiis 3, 5, 7, 9, serie punctorum majorum:

* I find this species cannot be reconciled with Motschoulsky's description of *S. fulvipes* here alluded to. I am sorry to say, however, that I cannot decide whether the Japanese insect be the same as the Indian *S. rufipes*, Fab., or not. D. S.

subtus niger, pedibus testaceis, femorum margine posteriore nigricante. Long. $2\frac{1}{4}$; lat. $1\frac{1}{4}$ lin.

Maxillary palpi yellow; the apex of the last joint slightly infuscate. Head closely and rather finely punctured, the front part yellow, the hind part black. Thorax yellowish, the disc a little clouded; it is rather finely and closely punctured, and has near each side a curved irregular patch of larger punctures. Elytra yellowish, not so densely punctured as the thorax, rather strongly striated, the sutural stria not reaching to the base, and the two or three next to it extremely indistinct at the base; from the third to the ninth each alternate interstice bears some larger punctures. The underside is black, the legs yellow; the femora darker behind, pubescent beneath, except at the extremity of each; hind tarsi long and slender; carina of the mesosternum largely developed, its front angle acute.

A single specimen only of this species has been taken by Mr. Lewis at Nagasaki; this is the only *Philhydrus* I have ever seen with distinctly striated elytra, though I know several species of *Helochares* sculptured in that way.

36. *Helochares striatus*, n. sp. Ovalis, minus depressus, rufo-testaceus, capite nigricante maculâ utrinque rufo-testaceâ; crebre fortiterque punctatus, elytris fortiter punctato-striatis; subtus obscure rufescens, tibiis tarsisque testaceis. Long. $2\frac{1}{3}$ lin.; lat. $1\frac{1}{3}$ lin.

Maxillary palpi entirely yellow, considerably shorter than in *H. lividus*, but similarly formed. Head blackish, yellow on each side in front of the eyes, coarsely and rather closely punctured. Thorax with the punctuation similar to that of the head, the lateral margin coarser behind than in front. Elytra rather less strongly punctured than the head and thorax, each with ten striæ of rather deeply impressed punctures, a short abbreviated row of punctures between the scutellum and first stria; the striæ do not extend quite to the outside, but leave a distinct margin much directed outwards. The under surface is pubescent and pitchy red; the elytra greatly overlap the hind body; the mesosternum has a slightly elevated tubercle in front. The tibiæ and tarsi are yellow.

I have seen but a single specimen of this very distinct and interesting species; it was found by Mr. Lewis at Nagasaki.

I possess allied species from Australia and Cochin China.

37. *Helochares Lewisius*, n. sp. Ovalis, nitidus, sub-

depressus, supra testaceus, capite prothoraceque crebre minus fortiter, elytris crebre subtiliter, punctatis; subtus fuscus, pedibus testaceis, femoribus obscurioribus. Long. $1\frac{1}{5}$—$1\frac{1}{2}$ lin.

Allied to *H. dilutus*, Er., but not one quarter its size, of a purer yellow colour above. The palpi are entirely yellow. The head and thorax are closely and finely punctured, the latter finely margined at the sides. The elytra are very finely punctured, and each has a row of larger punctures along the middle. The underside is fuscous, the mesosternum obscurely tuberculated. The legs are yellow, the femora pubescent except at the extremity, the pubescent part darker in colour.

Nagasaki and Hiogo.

38. *Laccobius minutus*, Lin. Nagasaki. The specimens differ a little from our European ones, but I do not perceive any sufficient characters to distinguish them as a species.

39. *Berosus japonicus*, n. sp. Ovalis, convexus, supra sordide testaceus, capite viridi-æneo, prothorace disco maculâ geminatâ (vel quadrigeminâ) parvâ; elytris obscure nigro-maculatis, fortiter punctato-striatis, interstitiis parce punctatis; antennis, palpis, pedibusque testaceis. Long. $2\frac{1}{2}$ lin.

This species is closely allied to *B. signaticollis*, Charp.; it is rather smaller than that species, and has the elytra shorter and rather more deeply striate; it is readily distinguished by the greater extent of the pubescence on the under surface of the femora: on the hind femur of *B. signaticollis* the pubescence does not extend more than half way to the extremity, while in *japonicus* only the apical third is glabrous. The spots on the disc of the thorax are small and not united in the middle, and sometimes they are separated transversely so as to form four small spots.

Nagasaki.

40. *Berosus* (*Enopleurus*) *Lewisius*, n. sp. Oblongo-ovalis, supra pallide testaceus, crebre fortiterque punctatus, capite vertice, prothoraceque disco utrinque minus evidenter fusco-maculatis; elytris crenato-striatis, interstitiis crebre punctatis, parce brevissime setigeris; antennis, pedibus palpisque testaceis, his apice extremo infuscato. Long. $2\frac{1}{5}$ lin; lat. 1 lin.

Head closely and rather deeply punctate, the vertex with a double fuscous spot. Thorax closely and coarsely punctured; on each side of the disc is a very small space, from which the punctures are absent; it is of a pale yellow colour, with a very indistinct and ill-defined cloudy marking on each side the middle; the elytra are pale, with three or four very indistinct black spots on each, they are deeply crenate-striate; the interstices are finely and moderately closely punctured, each puncture bearing a very short fine hair; the suture is prolonged at the apex into a sharp tooth, and each has also outside this a long and sharp spine, placed rather farther from the suture than usual. Legs pale yellow.

I have seen but a single specimen of this species taken at Nagasaki.

I possess several species of this section from China and Australia, but nothing closely allied to this.

41. *Volvulus profundus*, n. sp. Anguste ovalis, valde elevatus, supra æneus, nitidus, crebre punctatus, elytris punctato-striatis, striis internis basi obsoletis; antennarum basi, palpisque testaceis, his apice summo piceo; subtus niger; pedibus nigro-piceis, tibiis tarsisque anterioribus rufo-testaceis. Long. 2 lin.; lat. 1 lin.

Much smaller than *V. inflatus*, and above entirely brassy. Maxillary palpi yellow, the last joint about twice as long as the preceding one, pitchy at its extremity. Antennæ yellow, with the club dark. Head densely and finely punctured, behind the labrum more densely and finely than at the vertex. Thorax as wide as the elytra, with the base rounded, the posterior angles absent; it is densely and rather finely punctured. Scutellum narrow and elongate, finely punctured. Elytra moderately densely and finely punctured, each with ten striæ deeply impressed at the extremity, the three or four internal ones not visible at the base. Under surface black, the mesosternum very strongly carinated, the two hinder pair of femora pitchy, strongly punctured and glabrous beneath. Anterior tibiæ and tarsi obscurely yellowish.

Abundant everywhere.

I possess a very closely-allied species from several localities in the Malay Archipelago.

42. *Amphiops mater*, n. sp. Perconvexus, subhemisphæricus, piceus, capite, prothoraceque creberrime

subtiliter punctulatis; elytris striato-punctatis, striis internis subtilioribus, palpis tarsisque testaceis. Long. $1\frac{1}{2}$—2 lin.

Maxillary palpi yellow, last joint longer than the preceding one; the antepenultimate joint distinctly thickened. Head very broad, margined along the front, densely and finely punctured, especially in front, and with some irregularly placed larger punctures. Thorax densely and rather finely punctured, with a few indistinct larger punctures scattered about it. Elytra externally with some rows of coarse punctures; the internal ones are very fine, and only to be seen towards the extremity, where it is found that the rows are placed obliquely, so that the inner ones end near the suture some distance before the apex; the external interstices have each a row of coarse punctures, and also some finer punctures. The underside has only an extremely sparing and fine, scarcely visible, pubescence. The legs are yellowish or pitchy yellow, the tarsi yellow, the posterior tarsi slender, and not at all remiform. The intermediate coxæ are considerably separated, the mesosternum not carinate.

Taken at Hiogo and Nagasaki.

This insect is one of great interest from a peculiar structure of the abdomen, which has not yet been remarked. On the abdomen being taken off it is found that the first segment is placed at right angles with the others (the abdomen is perhaps flexible there), so that in life the hinder segments are turned upwards, and leave a large vacant space underneath the elytra. In one large specimen I have examined, no doubt a female, the abdomen at first sight appears to be entirely wanting. It is very possible that this structure enables the insect to carry about its eggs on dry land; it is, I have no doubt, at best only a semi-aquatic species, for it is not provided with pubescent portions on the under surface to retain air, as are the more aquatic palpicorns. This peculiar abdominal structure must be considered in connection with the inflated elytra, and also with the fact that the hind coxæ are transverse and largely developed, and free both above and below; add to this, that where the posterior legs are flexed an additional protection is given by them to the subelytral space. Observations on the habits of this species would, I have no doubt, be of great interest.

I am indebted to Mr. H. W. Bates for a closely allied

species from China. The relationship of the genus to *Cyclonotum* is evident.

43. *Hydrochus japonicus*, n. sp. Supra viridi-metallicus, palpis piceis; subtus niger, pedibus testaceis, femorum basi piceis; thorace foveolato, elytris interstitiis minus evidenter elevatis. Long. $1\frac{1}{3}$—$1\frac{1}{2}$ lin.

Smaller than either of our European species, somewhat similar in colour to *H. angustatus;* distinguished by the prothoracic foveæ, which appear separated from one another, as it were, by raised lines. Head and thorax metallic green or blue, the latter with five or six foveæ, occupying the greater part of its upper surface, placed very close to one another, so as to appear separated only by narrow linear elevations; the elytra are metallic, but not so brilliant in colour as the head and thorax; they are coarsely, closely, and regularly punctate-striate, the third and fifth interstices elevated, but not strongly; the fifth also elevated at the base; the under surface is silky, opaque, and blackish; the legs are yellow, the femora rather darker, especially at the base.

Common at Nagasaki.

44. *Cyclonotum latum*, n. sp. Sat convexum, nitidum, nigrum, palpis, antennis, tarsisque rufis, pedibus piceis; subtiliter sat crebre punctatus: elytris evidenter striato-punctatis. Long. $3\frac{1}{2}$ lin.; lat. 2 lin.

The broad, comparatively short form of this species is remarkable. The head is closely and rather finely punctured, especially in front; the thorax is finely and not densely punctured; it is fully three times as broad as long. The punctuation of the elytra is similar to that of the thorax, perhaps scarcely so close or distinct. Each is also furnished with ten distinct rows of punctures; these are coarser and more distinctly impressed at the extremity than at the base. The under surface is densely and finely punctured, pubescent, and opaque, except the central part of the metasternum; the prosternum is very acutely elevated in the middle in front. The legs are pitchy, the tarsi reddish.

I have seen but two specimens of this species taken at Nagasaki, where Mr. Lewis tells me it is common in ponds.

I possess an allied species, with punctate-striate elytra,

from Penang; in it the punctuation of thorax and elytra is much denser.

45. *Cercyon dux*, n. sp. Ovalis, leviter convexus, minus nitidus, niger, antennis, pedibus, palpisque piceo-rufis, prothorace lateribus castaneis, elytris colore variabilibus; dense punctatus; elytris striatis, striis postice profundioribus. Long. $1\frac{3}{4}$—2 lin.

This fine species is allied to *C. littoralis*, but has the anterior tibiæ simple at the extremity: it is remarkable for the dense and even punctuation of the elytra; these are either of a chestnut colour, or black, with the margins paler; the striæ are very deeply impressed towards the apex. The mesosternum has the intercoxal process very long; the prosternum is carinate along the middle, and the basal segment of the abdomen is finely carinate; the whole of the under surface is pubescent and opaque, except the pentagonal portion of the metasternum and the mesosternal process; these are shining, and distinctly and rather closely punctured. This and the following species evidently belong to the genus *Pelosoma* of Mulsant, which will, perhaps, ultimately have to be adopted as a good genus.

Seaweed. Nagasaki and Amakusa.

46. *Cercyon algarum*, n. sp. Ovalis, leviter convexus, nitidus, niger, antennis, palpis, pedibusque rufis; capite prothoraceque sat crebre punctulatis, elytris striatis, striis apicem versus profundioribus, intestitiis parce subtiliter punctulatis. Long. 1 lin.

Allied to *C. littoralis*, but with the anterior tibiæ simple at the apex, the punctuation of the interstices of the elytra finer and more scanty; the striæ are very deeply impressed towards the extremity. The structure of the under surface is similar to that of *C. dux*, the pentagonal space very finely and sparingly punctured.

Of four specimens I have seen, three have the elytra black, with only their very extremities paler; in the other specimen the colour of the elytra is pitchy; the species is probably very variable in colour, like its allies; the legs are furnished with fine short spines.

Under seaweed in company with *C. dux*.

47. *Cercyon aptus*, n. sp. Ovalis, leviter convexus, nitidus, colore variabilis, antennis, palpis, pedibusque testa-

ceis; elytris striatis, striis apice profundioribus, interstitiis subtilissime sat crebre punctulatis, alternis apicem versus paulo magis convexis; tibiis dense fortiterque spinulosis. Long. $1\frac{1}{3}$ lin.

Again allied to *C. littoralis*, but smaller, with the anterior tibiæ simple at the extremity, and the punctuation of the upper surface finer. It is allied to the preceding species, but is longer and very distinct therefrom by the armature of the tibiæ, the spines thereon being much more largely developed. The convexity of the alternate interstices of the elytra towards the extremity, though only slight, cannot be overlooked on a careful examination. The two specimens before me are discordant in colour, one being of a yellowish colour, the other pitchy, with the margins and extremities of the elytra paler.

Nagasaki and Hiogo; no doubt from under seaweed.

48. *Cercyon laminatus*, n. sp. Piceus, lateribus dilutior, capite nigro, antennarum basi, pedibus, palpisque testaceis, his articulo ultimo infuscato; crebre sat fortiter punctatus; elytris punctato-striatis, striis apice profundioribus. Long. $1\frac{3}{4}$ lin.

This species differs from the others of the genus, by the intermediate legs being separated only by a thin lamina, as in the genus *Philhydrus*. Maxillary palpi yellow, with the last joint infuscate. Antennæ with the base yellow, the club fuscous and very elongate. Head black, rather strongly and closely punctured. Thorax pitchy, more transparent along the front and sides, rather closely and strongly punctured. Scutellum very narrow. Elytra pitchy, paler yellow at the sides and extremity, deeply punctate-striate, the striæ deeply impressed behind, the punctuation of the insterstices distinct, but more sparing than that of the head and thorax. The legs are yellow, with the tarsi long; the tibiæ of the four front legs rather strongly, the hind ones more feebly, spined.

I have seen but two individuals of this very distinct species. Though it has completely the appearance of a *Cercyon* allied to *littoralis*, it may possibly prove the type of a new genus. Found in dung at Hiogo.

49. *Megasternum distinctum*, n. sp. Ovatum, valde convexum, nitidum, nigrum, lateribus dilutior, antennis basi, palpis pedibusque rufis; elytris punctato-striatis,

interstitiis minus crebre punctulatis; tibiis anticis integris. Long. $1\frac{1}{3}$—$1\frac{1}{2}$ lin.

This insect is similar in form and colour to *Megasternum boletophagum*, but is greatly larger; it is similar to that species in the structure of its under surface, but has the anterior tibiæ simple at the extremity; as this character is only a sectional one in *Cercyon*, it cannot here be considered of sufficient importance to justify the establishment of a new genus.

The head and thorax are rather strongly and closely punctured, the latter with a row of larger punctures placed along the base. The elytra are moderately strongly punctate-striate, the insterstices very finely punctured. The under surface is coarsely and closely punctured.

Two specimens without special locality.

IV. *Catalogue of the Phytophagous* Coleoptera *of Japan, with descriptions of the species new to science.* By Joseph S. Baly, F.L.S.

[Read 2nd December, 1872.]

The great majority of the species which I have enumerated or described in the present paper were collected by Mr. George Lewis during his residence in Japan. It is, undoubtedly, the largest collection of Japanese *Phytophaga* ever brought to this country; but in order to make the list of species more complete I have added the descriptions of a few insects previously existing in my own cabinet, which do not appear to have been met with by him. Here and there, under the various genera, I have made a few remarks on the geographical distribution of the species belonging to each; and it is my intention in a second paper to give a tabular list, similar to the one given by Mr. F. Smith in his paper on the *Hymenoptera* collected by Mr. Wallace, in order to show, as far as possible, their geographical range.

Fam. DONACIDÆ.

Genus Donacia, Fabr.

The single species taken by Mr. Lewis in Japan has a very wide range; it differs both in coloration and size; it is probably the *Donacia Javana*, Wiedeman.

Donacia æraria, Baly.

Phytoph. Malay., Ent. Trans. Lond., 3rd series, vol. iv. 7.

Hab.—Nagasaki and Hiogo, Japan; also Ceylon, India and the Malay Archipelago.

This insect was found by Mr. Lewis on a small species of water lily.

Fam. CRIOCERIDÆ.

Genus Lema, Fabr.

Lac. Mon. Phyt. i. 303.

Of the thirteen species enumerated or described below, five are proper to Japan itself, and are all described here for the first time; six are found in the adjacent parts of the Asiatic continent; one is also found in Siberia, and two extend into Europe.

Lema concinnipennis, Baly.

Annals and Mag. Nat. Hist. 1865, p. 157.

Nigra, nitida, abdominis apice testaceo; pedibus cæruleo-nigris; supra cæruleo-metallica, antennis nigris; thorace longitudine vix latiori, ante basin transversim excavato, disco rude, hic illic crebre punctato, vittâ longitudinali centrali impunctato, lateribus vix pone medium constrictis et ibi rugosis; elytris punctato-striatis, punctis basi fortiter—pone medium modice—impressis; utrisque infra basin transversim excavatis.

Var. A. Thorace minus crebre punctato, abdomine ut in typo.

B. Abdomine ♀ toto nigro.

C. Corpore supra nigro.

Long. $2\frac{1}{2}$—$3\frac{1}{4}$ lin.

Hab.— Nagasaki and Hiogo, Japan; also the coast of Tartary and Northern China. Found on the Chrysanthemum.

Forehead slightly raised, coarsely punctured, impressed in the middle with a deep longitudinal groove. Sides of thorax broadly constricted in the middle, a perpendicular space occupying the deepest part of the constriction, coarsely rugose; upper surface impressed with large deep punctures, which vary greatly in number; in most specimens they are crowded and confluent on the disk, having a central vitta free from punctures; the surface on either side this line is generally depressed, having the vitta itself raised and subcostate; the space between the punctures minutely but not closely punctured; in many specimens, especially the large ones, the larger punctures are much less numerous, and are scattered at distant intervals over the surface. Scutellum subquadrate, its surface impressed with shallow punctures, and sparingly clothed with adpressed sericeous hairs. Elytra strongly punctured

at the base; the punctures much smaller and less deeply impressed behind the middle; basilar space bounded beneath by a broad, well-defined excavation, which does not extend quite to the suture, but occasionally curves upwards along its edge to the scutellum. Body beneath black; abdomen clothed with very fine sericeous hairs; last three segments testaceous.

This insect (previously described by me from specimens brought from Northern China) varies so greatly in size and sculpturing of thorax, that I have thought it best, after examining the fine set of individuals placed in my hands by Mr. Lewis, to make a fresh diagnosis of the species; in the majority of the larger specimens from Japan the abdomen is entirely black; but I possess others, equally large, from the coast of Tartary, in which the apex of the abdomen is testaceous. I presume, therefore, that this is the normal colouring, the black apex being only a variety. All the specimens that I have examined, however they may differ in size or in the puncturing of the upper surface of the thorax, agree in having a broad longitudinal space (much more distinct than in *L. coronata*), occupying the deepest part of the lateral constriction, coarsely rugose.

Lema diversa.

Nigra, nitida, vertice scutelloque piceis, thorace elytrisque piceo-fulvis; thorace subquadrato, lateribus medio constrictis, disco impunctato, ante basin transversim sulcato, sulco medio unifoveolato; elytris utrisque infra basin transversim excavatis, fortiter punctato-striatis, interstitiis ad apicem subcostatis.

Long. $2\frac{3}{4}$—3 lin.

Hab.—Nagasaki, on the Chrysanthemum; also China.

Forehead smooth, impressed with a deep longitudinal groove. Thorax scarcely broader than long, subcylindrical; sides broadly constricted in the middle, the deepest portion of the constriction rugose; disk smooth and shining, nearly impunctate, a longitudinal space in the centre impressed with a few fine punctures; a short distance in front of the basal margin is a distinct transverse groove, the centre of which is impressed with a single fovea. Scutellum piceous, glabrous. Elytra parallel, each transversly excavated below the basilar space, the excavation not extending to the suture; surface regularly

punctate-striate, the punctures large and deeply impressed on the basal half, somewhat smaller towards the apex. Body beneath clothed with adpressed silvery hairs. Intermediate tibiæ in the ♀ simple.

Lema Lewisii.

Nigra, nitida, thorace elytrorumque apice rufo-testaceis, vertice obscure rufo; thorace longitudine vix latiori, lateribus medio constrictis, disco ante basin transversim sulcato, sub lente minute punctato, medio striâ longitudinali punctorum magis distinctorum impresso; elytris cæruleo-nigris, infra basin vix transversim depressis, subfortiter punctato-striatis, interstitiis ad apicem externisque totis subcostatis.

Long. $2\frac{1}{2}$ lin.

Hab.—Nagasaki.

Forehead distinctly raised, smooth, faintly wrinked under a deep lens, impressed in the middle with a deep longitudinal groove. Thorax minutely punctured; disk impressed a short distance in front of the basal margin by a distinct transverse groove, on the centre of which is placed a single large fovea; on the middle of the disk is a longitudinal line, formed by a double row of fine punctures; on the sides in front are a few coarser punctures; sides constricted in the middle; a narrow space on the deepest part of the constriction coarsely rugose (these rugosities covered a much smaller space than in *L. concinnipennis*, and are only visible on the upper part near the disk. Scutellum subtrigonate, its apex rounded. Elytra deeply punctate-striate, the punctures very large on the basal half of the surface, rather smaller towards the apex; basilar space bounded beneath by a broad, shallow, ill-defined transverse space.

Lema coronata.

Nigra, nitida, verticis lineâ transversâ rufâ; thorace subquadrato, lateribus medio constrictis, disco sub lente minute punctato, ante basin transversim sulcato, sulco medio foveâ unicâ impresso; elytris infra basin transversim excavatis, sat fortiter punctato-striatis, interstitiis apicem versus externisque totis elevatis; tibiis intermediis intus ante medium dente parvo armatis.

Long. $2\frac{1}{2}$ lin.

Hab.—Nagasaki, on the Chrysanthemum.

This insect is so exactly similar in form and sculpturing to the two preceding species, that a detailed description is not necessary; its forehead, however, is flatter and less deeply grooved. I only know three specimens, all ♀; they agree entirely in coloration, and in having the inner surface of the intermediate tibiæ armed just before its middle with a small ill-defined tooth; this character will at once separate it from the two preceding insects. All the three species are very closely allied to *L. coromandeliana*, Fabr.: they may be distinguished from it by the following character amongst others: the deepest part of the lateral constriction of the thorax in *L. coromandeliana* and its varieties is entirely smooth, whilst in the three species before us it is always more or less rugose; also in *L. coromandeliana* the inner surface of the intermediate tibia in the ♂ (not the ♀, as in *L. coronata*) is armed with a small tooth.

Lema honorata.

Nigra, nitida, pedibus cyaneo-tinctis, capite thoraceque rufis, antennis (articulo primo prætermisso) nigris; thorace subcylindrico, latitudine distincte longiori, lateribus medio constrictis; disco ante basin leviter, transversim depresso, lævi, medio vittâ punctorum minutorum impresso; elytris metallico-cæruleis, infra basin transversim depressis, fortiter punctato-striatis, interstitiis ad apicem subcostatis; pedibus modice robustis.

Long. $2\frac{1}{2}$—3 lin.

Hab.—Nagasaki, found on the Dioscorea.

Head strongly constricted on either side behind the eyes, the latter deeply notched; forehead impressed with a faint longitudinal groove. Thorax distinctly longer than broad; sides deeply constricted at the middle, the constriction smooth; upper surface transversely depressed in front of the base; disk very convex, somewhat subglobular, impunctate, with the exception of a double row of very fine punctures, which form a longitudinal line down the middle. Elytra oblong, parallel; above convex, slightly depressed below the basilar space, the latter slightly elevated; surface deeply punctate-striate, interspaces towards the apex subcostate. Legs moderately robust.

L. honorata must stand close to *L. Lewisii* and its allies: it may be known by the longer thorax, the smooth surface of its lateral constriction, and by the stout legs.

Lema Fortunei, Baly.

Trans. Ent. Soc. Lond. N. S. vol. v. 148.

Hab.—Nagasaki; also northern China.

Lema puncticollis, Curtis.

Brit. Ent. vii. pl. 323.

Rugicollis, Suffr. Stettin. Ent. Zeit. 1841, p. 97; Lac. Mon. Phyt. i. 362.

Hab.—A single specimen from Nagasaki: this species is spread over a considerable area, being found in southern Russia, and the whole of middle and northern Europe, including England, where it occasionally occurs. The specimen taken by Mr. Lewis is deeply tinged with purple; in other respects it agrees with the European form.

Lema dilecta.

Nigra, nitida, supra cyanea, frontis maculâ pedibusque fulvis, genubus, tibiis tarsisque infuscatis; thorace subcylindrico, fere quadrato, lateribus medio constrictis; supra ante basin transversim sulcato, disco ruguloso; elytris infra basin leviter transversim depressis, sat fortiter punctato-striatis, interstitiis ad apicem externisque totis subcostatis.

Long. $1\frac{1}{2}$ lin.

Hab.—Hiogo, Japan; a single specimen.

Very closely allied to *L. flavipes*, but at once to be known from that species by the shorter subcylindrical and rugose thorax. Forehead smooth, not longitudinally sulcate, being only slightly impressed with a small fovea; surface (under a lens) very finely and transversely strigose; in the middle between the upper portion of the eyes is an ill-defined fulvous spot; antennæ black, the second joint obscure piceous. Thorax subcylindrical, constricted at the middle, and armed, in addition to the usual tuberosity in front, with a second, small, close to the basal margin; upper surface finely but distinctly rugose, impressed a short distance in front of the base with a transverse groove, which curves upwards on either side to join the lateral constriction. Elytra sculptured in a similar manner to *L. flavipes*.

Lema flavipes, Suffr.

Lac. Mon. Phyt. i. 367.

Var. A. Tibiis tarsisque infuscatis, cæteris ut in typo.

Hab.—Nagasaki; a single specimen of var. A (Mr. Lewis). The same variety has been sent from Tsu Sima by Messrs. Bowring and A. Adams. I have also received it from eastern Siberia (the borders of the River Angara); the form with entirely pale legs appears to be confined to eastern Europe.

Lema Downesii, Baly.

An. and Mag. Nat. Hist. 1865, p. 156.

Nigro-suturalis, Clark, Append. Catal. Phyt. p. 37.

Hab.—Nagasaki, also Bombay; sent from the latter locality by Dr. E. Downes.

Lema Adamsii, Baly.

An. and Mag. Nat. Hist. 1865, p. 156.

Quadripunctata, Swartz in Schönh. Syn. Ins. ii. 281.

Var. A. Elytrorum thoracisque maculis unâ vel alterâ obsoletis.

Var. B. Elytrorum maculis totis immaculatis.

Var. C. Elytris nigris, fulvo-limbatis; femoribus postice ante apicem nigro-notatis.

Hab.—Nagasaki; 2,000 feet above the sea level; also Chusan; collected by Mr. A. Adams.

This species, which was previously described by me from a single specimen taken at Chusan by Mr. A. Adams, proves to be very variable; no two individuals taken by Mr. Lewis agreeing exactly in their markings.

I have no doubt but that the description by Swartz in Schönherr of *L. quadripunctata* was drawn up from a variety of this species with immaculate thorax. The name, however, cannot stand, having been previously used by Olivier for an insect belonging to the same genus.

Lema delicatula.

Fulva, nitida, capite (collo prætermisso) nigro, antennis nigro-piceis aut nigris, subtus pallidis; scutello, tibiis apice tarsisque picco-tinctis; elytris sat fortiter punctato-striatis,

infra basin transversim excavatis, cyaneis, fasciâ latâ prope medium positâ, fulvâ, ornatis.

Long. 1¾—2 lin.

Hab.—Nagasaki.

Head shining black, the neck fulvous; vertex smooth, impressed with a very short longitudinal groove. Thorax very slightly broader than long; sides deeply constricted in the middle; above convex, transversely grooved in front of the base, shining, very minutely and somewhat remotely punctured, the puncturing being visible only under a deep lens; on the centre of the disk, however, is a longitudinal space, impressed with a double row of rather larger but still very fine punctures. Scutellum subtrigonate, fulvous, edged with piceous. Elytra much broader than the thorax, deeply and strongly punctate-striate; on the middle third of the elytra is a broad common transverse fulvous fascia.

Lema 10-*punctata*, Gebler.

Lac. Mon. Phyt. i. 597.

Hab.—Japan. Common on the coasts, where it is found on the tea plant; also Northern China and Siberia.

This species, unknown to Lacordaire, is a true *Lema*, and not a *Crioceris*, as suspected by that author. It varies greatly in the markings on the elytra; they are sometimes nearly obsolete.

Genus Crioceris, Geoff.

Lac. Mon. Phyt. i. 546.

Four species of this genus are known from Japan; two, *rugata* and *parvicollis*, are not up to the present time found elsewhere; the third, *subpolita*, is common to Japan and Northern China, whilst the fourth, 14-*punctata*, is also found in Northern China, Mantchuria, Siberia, and Eastern Europe.

Crioceris rugata, Baly.

Annals and Mag. Nat. Hist. 1865, p. 154.

Hab.—Hiogo.

Crioceris parvicollis.

Nigro-cuprea, nitida, femoribus basi, pectore, abdomineque rufo-fulvis, antennis nigro-cyaneis, apice nigris, thorace subquadrato, subcylindrico, lateribus modice constrictis,

profunde punctato, lateribus subtus limbisque apicali et basali, hoc medio late interrupto, obscure rufis; elytris thorace multo latioribus, oblongis, rufo-fulvis, cupreo vix micantibus, profunde punctato-striatis; scutello griseo-hirto.

Long. 3—3½ lin.

Hab.—Nagasaki.

Head deeply constricted behind the eyes, coarsely punctured, front deeply trisulcate; antennæ robust, more than half the length of the body, six or seven lower joints nigro-cyaneous, the rest black; basal joints nearly glabrous, the others clothed with adpressed black pubescence. Thorax subquadrate, sides moderately constricted, deeply and coarsely punctured, interspaces shining, impunctate. Scutellum narrowly trigonate, clothed with adpressed griseous hairs. Elytra much broader than the thorax, oblong, parallel; above convex, not depressed below the basilar space, deeply and regularly punctate-striate, interspaces towards the apex slightly convex.

C. parvicollis is nearly allied to *C. rugata*, but may be known by the metallic tinge of its body, and by the hairy scutellum; both species ought to stand close to *C. impressa*, Fabr.

Crioceris subpolita, Motsch.

Etud. Ent. 1860, p. 22.

Var. A. Pectoris medio femoribusque basi rufo-fulvis, abdomine sæpe immaculato; mesosterni apice valde dilatato.

Crioceris lateritia, Baly, Trans. Ent. Soc. 3rd Series, vol. i. p. 613.

Var. B. Minor; corpore subtus omnino piceo.

Hab.—Nagasaki; var. B, Hiogo; also Northern China; sent by Mr. Fortune.

This insect varies greatly in the colouring of its under surface; the form of the apex of the mesosternum is also very variable; in some specimens it is of the usual shape, in others it is strongly dilated, every intermediate form existing between the two extremes. A type communicated to me by M. Motschulsky, which I compared with specimens from Northern China (described by me as *C. lateritia*), was very dark-coloured beneath, and had the mesosternum smaller than usual.

Crioceris 14-*punctata*, Fabr.

Lac. Mon. Phyt. i. 584.

Hab.—Tsu Sima, Japan; it is also met with in North-

ern China, Mantchuria, Siberia, and Eastern and Central Europe.

Mr. Lewis has not taken this insect; the specimens I have seen came from Tsu Sima, a small island in the Straits of Corea, to the west of Simono-saki, and were found by Messrs. Bowring and A. Adams; the insects from China and Japan have the black spots on the elytra more fully developed than those from Siberia and Eastern Europe.

Fam. MEGALOPIDÆ.

Genus Temnaspis, Lac.

Mon. Phyt. i. 716.

Temnaspis Japonicus.

Elongatus, niger, nitidus, pube sat erectâ sordide griseâ aut nigrâ vestitus; abdomine, thorace elytrisque fulvis, clypeo antice, palpis tibiis posterioribusque basi pallide piceis, vertice foveâ magnâ impresso.

Long. 4 lin.

Hab.—Nagasaki.

Labrum clothed with coarse fulvous hairs; clypeus transverse, its lower half pale piceous; face between the eyes distantly punctured, its pubescence black, vertex impressed in the middle with a large oblong fovea. Thorax subquadrate, constricted at the base and apex, furnished on either side just in front of the posterior angle with a subconical tuberosity; disk with a longitudinal depression, running down the middle for nearly its whole length; surface distantly punctured. Scutellum broad, triangular, its apex bisinuate. Elytra more closely and coarsely punctured than the thorax, clothed with dirty white hairs, intermingled here and there with black. Hinder thighs thickened, armed beneath near the apex with two acute piceous teeth; the extreme apex of the thigh itself, the basal third of the hinder tibiæ, together with the extreme base of the intermediate pair, also piceous.

Genus Pedrillia, Westw.

Trans. Ent. Soc. Lon. 3rd Series, vol. ii. p. 280.

Two species of the above genus have been already described; one by Westwood, from India; the other by the late Rev. H. Clark, from Ceylon.

Pedrillia annulata.

Elongata, fusco-fulva, pilis subdepressis griseis vestita, antennis, basi exceptis, capitis plagâ frontali, thoracis subcordatis vittâ centrali lateribusque apice, mesothoracis utrinque maculâ, pleuris, abdominis apice, femoribus tibiisque apice tarsisque nigro-piceis; elytris subcrebre fortiter punctatis, utrisque plagâ magnâ flavâ, nigro-annulatâ, pone medium positâ, ornatis.

Long. 2 lin.

Hab.—Japan. Collected by Mr. Moor.

Head coarsely punctured, eyes deeply notched; antennæ half the length of the body, joints nigro-piceous above, obscure fulvous beneath; two basal joints entirely fulvous; front with a large subrotundate nigro-piceous patch, which occupies nearly the whole space between the upper portion of the eyes, and sends a short ramus upwards to the vertex. Thorax scarcely broader across its middle than long, subcordate; upper surface transversely convex, rather closely punctured, a broad vitta on the middle of the disk, extending from the base nearly to the apex, and the sides in front nigro-piceous; the extreme lateral border also narrowly edged with black. Scutellum triangular, its apex truncate, the upper surface closely punctured, pale piceous. Elytra narrowly oblong, slightly dilated posteriorly; convex, feebly depressed below the base, the basilar space indistinctly raised, surface coarsely and deeply punctured; each elytron behind the middle with a large subrotundate obscure flavous patch, broadly margined with nigro-piceous. Hinder thighs thickened.

I only know a single specimen of this species in my own cabinet.

Fam. CLYTHRIDÆ.

Genus Clytiira, Laichart.

Lac. Mon. Phyt. ii. 190.

Clythra Japonica.

Subelongata, convexa, nigra, nitida, antennarum basi thoraceque fulvis, hoc basi utrinque sinuato, angulis posticis distinctis; supra lævi, fasciâ latâ undulatâ, utrinque abbreviatâ, interdum medio interruptâ, nigrâ ornato; scutello trigonato, fulvo; elytris leviter punctatis, nigris, fasciâ latâ communi prope medium positâ, et utrisque maculâ subapicali, fulvis ornatis.

Long. 2½ lin.

Hab.—Nagasaki.

Head slightly enlarged in the ♂, smooth and shining, a broad space between the eyes slightly depressed; its surface, together with the lower portion of the face itself, faintly wrinkled; eyes large, very slightly prominent, feebly notched within, surrounded by a sunken orbit, the surface of which is distinctly but not deeply punctured, and sparingly clothed with white hairs. Antennæ with the four lower joints fulvous, more or less stained with piceous, the rest nigro-piceous; fourth and six following joints trigonate, the terminal joints ovate. Thorax more than twice as broad as long, sides subparallel at the base, thence rounded and converging to the apex; hinder angles distinct, their apices obtuse; basal margin truncate on either side, the basal lobe broad, slightly produced, broadly rounded; upper surface smooth, impunctate. Scutellum large, trigonate, its apex acute; surface fulvous, stained at the base with piceous. Elytra oblong, not broader than the base of the thorax, sides feebly lobed at the base; above convex, finely punctured, shining black, with a faint bluish tinge, a broad common band across the middle, dilated on the suture, and a large transverse subapical patch on each elytron, not touching either the sutural or apical margins, bright fulvous: in some specimens there are several small spots of the same colour on the basal margin. Legs robust in the ♂, rather more slender in the ♀. This insect must stand close to *C. atraphaxides* and its allies.

Clythra læviuscula, Ratzeburg.

Lac. Mon. Phyt. ii. 206.

Hab.—Hiogo; a single specimen found on the oak. I also possess it from Chusan, collected by Mr. A. Adams; another specimen from Vladimir Bay, Mantchuria, taken by the same gentleman, has the hinder spot on the elytra nearly obsolete: this species is spread over the north of Asia, and nearly the whole of Europe.

Genus Gynandrophthalma, Lac.

Lac. Mon. Phyt. ii. 256.

Three species of this genus are at present known from Japan; none of them, however, are peculiar to that country; one also inhabits India, the others extend over Northern Asia and a great part of Europe.

Gynandrophtalma chrysomeloides, Lac.
Mon. Phyt. ii. 268.

Hab.—Kawachi, Japan, also India.

Gynandrophtalma cyanea, Fabr.
Lac. Mon. Phyt. ii. 301.

Hab.—Japan (Mr. Moor); also Siberia and Central Europe.

Gynandrophtalma aurita, Fabr.
Lac. Mon. Phyt. ii. 304.

Hab.—Lepedeza (Mr. Lewis); Matsmai, Jesso (Mr. A. Adams); also Siberia and Central Europe.

The specimens from Japan are all of large size, and those collected by Mr. Lewis have all the legs entirely yellow; the one from Jesso has the tarsi stained with piceous.

Genus Coptocephala, Lac.
Mon. Phyt. ii. 345.

The two species below both have in the *male* very large heads and prominent eyes; Lacordaire has separated the first, *C. pallens*, and formed it into his sub-genus *Physauchenia;* had he seen the typical form of the insect, which closely resembles in pattern all the other species of *Coptocephala*, he probably would not have done so; the characters given by him for the sub-genus are very slight and unsatisfactory; the second species is now described for the first time, and is at present confined to the Japanese Islands.

Coptocephala pallens, Fabr.
Physauchenia pallens, Lac. Mon. Phyt. ii. 368.

Hab.—Nagasaki, also China and India.

Coptocephala orientalis.

Elongata, subcylindrica, subtus nigra, pube adpressâ griseâ vestita; supra nigra, cyaneo-micans, antennis nigris, basi fulvis; thorace elytrisque fulvis, illo lævi, his tenuiter punctatis, margine basali, maculâ humerali fasciâque transversâ pone medium positâ nigris.

Mas.—Capite oculisque magnis, mandibulis incrassatis.

Long. $2\frac{1}{3}$—$2\frac{2}{3}$ lin.

Hab.—Hiogo.

Head prominent, much swollen and developed below the eyes in the ♂, of normal size in the ♀; jaws in the former sex very large, stained with rufous at the apex; eyes large, prominent, slightly notched within; vertex swollen, smooth, impunctate; face between the eyes irregularly excavated, but not punctate; clypeus deflexed, its anterior edge angulate-emarginate; labrum in the ♂ large; four lower joints of antennæ fulvous, stained above with piceous, the rest black. Thorax transverse, sides broadly rounded at the base, thence obliquely converging to the apex; basal margin reflexed, slightly sinuate on either side, basal lobe slightly produced; upper surface smooth, impunctate, with the exception of a few punctures scattered along the base. Scutellum elongate-trigonate, smooth, impunctate. Elytra not broader than the base of the thorax, oblong, sides slightly lobed at the base; above convex, distinctly and somewhat closely punctured; a narrow line on the inner half of the basal margin, a humeral patch and a short transverse band just beyond the middle of each elytron (this latter often interrupted) black. Legs entirely black.

This species closely resembles *C. floralis;* it may be known by its entirely black legs, by the larger head in the ♂, and also by the absence of the punctures on the face, visible in the former insect.

Fam. LAMPROSOMIDÆ.

Genus Lamprosoma, Kirby.

Lac. Mon. Phyt. ii. 574.

Lamprosoma cupreatum.

Breviter ovatum, postice attenuatum, convexum, cupreum, antennis corporeque inferiori nigris; thorace subremote, subtenuiter punctato; elytris minus fortiter punctatis, punctis rotundatis, subseriatim dispositis.

Long. $1\frac{1}{3}$ lin.

Hab.—Nagasaki.

Head finely punctured. Thorax twice as broad at the base as long; sides obliquely converging from behind forwards, more quickly rounded near the apex; basal margin oblique on either side; basal lobe moderately produced,

rounded; disk finely but not closely punctured. Elytra more strongly punctured than the thorax, the punctures round, not very deeply impressed, indistinctly arranged in striæ near the suture.

Lamprosoma nigro-cæruleum.

Ovatum, convexum, postice attenuatum, nigro-cæruleum, metallicum, subtus nigrum; thorace subremote, tenuiter punctato; elytris subfortiter punctatis, punctis subseriatim dispositis.

Long. $1\frac{1}{4}$ lin.

Hab.—Nagasaki, on the ivy.

Lower portion of face more or less deeply excavated, forehead finely and remotely punctured. Thorax with the sides obliquely narrowed from base to apex, rather less oblique at the base, hinder angles obtuse; basal margin oblique on either side, the basal lobe very slightly produced, subangulate, disk distinctly but finely punctured, the punctures subremote. Elytra more strongly punctured than in *L. cupreatum*, the punctures subrotundate.

The present insect may be at once distinguished from the preceding by its different coloration and by its longer and narrower form; both species are separated from our *L. concolor* (to which they are closely allied) by the absence of the deeper punctures which form regular longitudinal striæ on the elytra of that insect.

Fam. CHLAMYDÆ.

Genus Chlamys, Knoch.

Lac. Mon. Phyt. ii. 649.

Chlamys Lewisii.

Elongata, parallela, nigra, opaca, hic illic maculis nonnullis parvis rufo-fulvis ornata, antennis pedibusque obscure fulvis, his dorso infuscatis; thorace rude et crebre punctato, dorso gibboso, gibbo valido, postice compresso, rete elevato, hic illic rufo-tincto ornato; elytris parallelis, rugoso-punctatis, disco interiori ante medium tuberculis parvis obscure rufis, vix pone medium tuberculo magno, transversim compresso, instructis; apice tuberculis nonnullis subconicis, hic illic cretâ elevatâ connexis, instructo; disco exteriori laxe elevato-reticulato.

Long. $1\frac{3}{4}$—2 lin.

Hab.—Nagasaki.

Face deeply punctured, the basal joints of the antennæ, the labrum, a triangular patch on the clypeus, and a spot on either side of the forehead, pale piceous. Thorax coarsely and closely punctured, disk elevated into a strong gibbosity, compressed behind, and bounded posteriorly on either side by an oblique groove; its surface is covered with an irregular strongly-raised reticulation, sides with some ill-defined, irregular tuberosities. Elytra parallel, strongly lobed at the base, strongly rugose-punctate; inner disk with six or seven piceous tuberosities placed before the middle, and a short transverse, strongly-raised ridge just behind the middle near the suture; hence to the apex the surface is covered with more or less compressed large conical tubercles, which are connected here and there by irregular ridges; outer disk coarsely elevate-reticulate.

Chlamys interjecta.

Oblonga, nigra, opaca, antennis piceis, basi obscure fulvis; thorace rugoso-tuberculato, dorso gibboso, gibbo valido, apice longitudinaliter canaliculato; elytris granulosis, sat fortiter, subseriatim punctatis, tuberculis validis plurimis instructis.

Long. $1\frac{3}{4}$ lin.

Hab.—Nagasaki.

Head closely punctured; five lower joints of antennæ fulvous, the rest piceous. Thorax twice as broad at the base as long, sides obliquely converging from base to apex; upper surface rugose; disk raised into a stout gibbosity, somewhat compressed behind, and bounded on either side posteriorly by an oblique depression; its surface, as well as that of the rest of the thorax, covered with raised tubercles, apex and anterior face of the gibbosity impressed with a broad longitudinal groove. Elytra not broader than the base of the thorax; sides strongly lobed at the base, above convex, granulose, the humeral callus thickened, rugose; surface distinctly punctured, the punctures irregularly arranged in longitudinal striæ; on each elytron are numerous strong tubercles; five or six smaller than the others are placed on the anterior disk, one longer and transversely convex, situated just beyond the middle near the suture, and is connected by an oblique ridge with a coarse reticulation just below the humeral callus; lastly, seven or eight large tuberosities cover the entire apical third of the elytron.

Chlamys spilota.

Elongata, parallela, convexa, nigro-picea, opaca, obscure fulvo-maculata, antennis pedibusque obscure fulvis, his nigro-piceo maculatis, posticis fere totis nigro-piceis, thorace rude rugoso-punctato, flavo-maculato, maculis plus minusve elevatis, hic illic sæpe confluentibus; medio gibboso, gibbo apice leviter sulcato; elytris profunde punctatis, subnitidis, obscure fulvo-maculatis, tuberculis nonnullis, inter se rete elevato connexis, instructis.

Long. $1\frac{1}{4}$—$1\frac{2}{3}$ lin.

Hab.—Japan (Mr. Moor).

Head deeply and coarsely punctured, the clypeus and two large spots on the front fulvous; the frontal patches are smooth and distantly punctured; they occupy nearly the whole space between the upper half of the eyes, and each send a small branch from the lower extremity into the emargination of the eyes. Thorax rugose-punctate, covered in front and on the sides with irregular, ill-defined, slightly-raised obscure fulvous spots; disk gibbous, the gibbosity bounded on either side by an oblique depression, compressed posteriorly, its apex faintly sulcate; on its anterior surface are a number of small raised reticulations. Elytra quadrate-oblong, sides with the basal lobe strongly produced; upper surface deeply punctured, the punctures irregularly arranged in longitudinal striæ; each elytron with a number of large, strongly-raised, irregular tubercles, connected here and there by irregular ridges; four of these are transversely compressed, and are placed as follows: one just below the basilar space, on the middle of the disk; the second just below the middle, close to the suture; the third on the outer disk, parallel with the last; and the fourth near the outer margin, close to the apex. In the inner disk, near the suture, halfway between the middle and the apex, is a large conical tuberosity, its apex truncate.

Fam. CRYPTOCEPHALIDÆ, Lac.

Genus Cœnobius, Suffr.

Lin. Ent. xi. 61.

The species described by Suffrian are found in Caffraria; it is, therefore, very remarkable to find the genus reappear in such a totally different part of the world. Mr. Lewis

has brought over two species, which agree entirely in generic characters with their African brethren.

Cœnobius sulcicollis.

Ovatus, convexus, niger, nitidus, pedibus quatuor anterioribus, capite thoraceque piceo-fulvis, antennis flavis, extrorsum nigris, pedibus posticis piceis; thorace nitido, disco anteriori lævi, impunctato, utrinque pone medium lineâ obliquâ impresso, ante basin distincte sed leviter punctato; elytris sulcato-striatis, striis tenuiter punctatis; interstitiis disci interioris planis, ad apicem obsolete convexis, iis disci exterioris convexis.

Long. $1\frac{1}{4}$ lin.

Hab.—Nagasaki.

Eyes large, reniform, touching each other at their apices, antennæ slender, five lower joints pale yellow, six outer slightly compressed, black. Thorax twice as broad as long at the base, sides rounded and converging at the base, obliquely converging in front; basal margin oblique on either side, basal lobe slightly produced; above convex, subcylindrical, the apical border distinctly margined; smooth and shining, impressed on either side with an oblique groove, which runs outwards and upwards towards the lateral margin; space behind these grooves impressed with large round shallow punctures. Elytra scarcely broader than the thorax at their base, slightly broader posteriorly; above convex, sulcate-striate, interspaces on the inner disk flattened.

Cœnobius piceus.

Ovatus, convexus, piceus, nitidus, pedibus antennisque pallidioribus, his basi fulvis; thorace remote punctato; elytris sulcato-striatis, striis tenuiter punctatis, interstitiis convexis.

Long. 1 lin.

Hab.—Nagasaki; a single specimen only.

Eyes large, reniform, their apices nearly touching, being only separated from each other by a very narrow line; antennæ pale piceous, five lower joints, together with the basal half of the sixth, fulvous; six outer joints compressed, trigonate. Thorax nearly twice as broad at the base as long, sides rounded and converging from base to apex, basal margin oblique and faintly bisinuate on either side, basal lobe distinctly produced, obtusely angled; upper

surface remotely punctured; along the basal margin is placed a single row of punctures. Scutellum narrowly ovate. Elytra rather broader than the base of the thorax, slightly narrowed posteriorly, convex, sulcate-striate, each stria impressed with a single row of fine, elongate punctures; interspaces convex, smooth, impunctate.

Genus Dioryctus, Suffr.

Lin. Ent. xiv. 3.

Only two species of this rare and interesting genus have previously been described; one (the type) by Suffrian, from Ceylon, the other by myself from Sumatra, brought from that country by Mr. Wallace.

I possess a fourth species, undescribed, sent from Siam by the late M. Mouhot; all, as will be seen, are Asiatic.

Dioryctus Lewisii.

Rotundato-ovatus, valde convexus, obscure piceus; subtus niger, pedibus antennisque flavis; thorace subcrebre punctato; elytris regulariter punctato-striatis, striis leviter sulcatis, interstitiis minute punctatis.

Long. $1\frac{1}{4}$ lin.

Hab.—Nagasaki; a single specimen only.

Thorax more than twice as broad at the base as long, sides rounded and quickly converging from base to apex; basal margin distinctly bisinuate on either side; basal lobe strongly produced, acute, concealing the minute scutellum; above convex, somewhat closely impressed with oblong punctures. Scutellum minute, Elytra convex, sides strongly lobed at the base; regularly punctate-striate, the striæ slightly sulcate; interspaces flattened on the inner disk, convex towards the apex and on the outer disk, finely but not closely punctured. Prosternum transverse, its surface transversely concave, the medial longitudinal ridge being obsolete.

The present species, of which Mr. Lewis possesses a single specimen, differs from the type in the central ridge on the prosternum being obsolete; in all other generic characters it closely agrees.

Genus Cryptocephalus, Geoff.

Suffr. Lin. Ent. ii. 13.

All the fifteen species enumerated or described in the

present genus are (although often closely resembling European forms) extra European; eight are peculiar to Japan; seven are common to those islands and to the adjacent parts of the Asiatic continent.

Cryptocephalus trifasciatus, Fabr.

Suffr. Lin. Ent. xiv. 12.

Hab.—Nagasaki, also China; the specimens collected by Mr. Lewis are much brighter and less deeply marked with black than those that I possess from China.

Cryptocephalus perelegans.

Anguste oblongus, fulvus, nitidus, antennis extrorsum nigris, thorace picco-fulvo, margine antico, vittâ laterali, intus late emarginato, et utrinque vittâ obliquâ, ante basin positâ, flavis; elytris piceis, fortiter punctato-striatis; utrisque pustulis octo, 3-2-2-1 positis, flavis ornatis.

Long. $1\frac{3}{4}$—2 lin.

Hab.—Nagasaki.

Head smooth, face flat, impunctate; eyes elongate, broadly emarginate; antennæ slender, two-thirds the length of the body, four lower joints fulvous, the fifth piceous, the rest black. Thorax twice as broad at the base as long; basal margin concavely excavated on either side, basal lobe scarcely produced; sides rounded at the base, thence obliquely converging to the apex, hinder angles produced posteriorly, acute; above transversely convex, surface smooth, impunctate; picco-fulvous, the extreme basal border narrowly edged with black; a broad lateral vitta, deeply emarginate within, and an oblique patch on either side at the base, together with the apical border, flavous; these flavous markings are usually ill-defined. Scutellum subcordate, smooth, nigro-piceous, its disk fulvous. Elytra not broader than the base of the thorax, sides moderately lobed at the base; above convex, thickened in the immediate neighbourhood of the scutellum, punctate-striate, the punctures large, piceous, interspaces convex; striæ on the middle disk, below the humeral callus, irregular and ill-defined; each elytron with eight yellow spots, arranged as follows: three at the base attached to the basal margin, sometimes confluent, the first placed close to the suture, the second just within the humeral callus, and the third on the outer margin (this last is sometimes obsolete); two just before the middle, oblong, parallel, the inner one near

the suture, the other on the outer disk; two just below the middle, also parallel, one on the inner disk, subrotundate, the other subtrigonate, near the outer margin, and lastly, one transverse, subapical; this patch is often confluent with the outer patch of the row above. Anterior coxæ and thighs stained with flavous.

This species, which strongly resembles in coloration many North American species of the genus, must stand close to *C. bissexguttatus,* Boh.

Cryptocephalus tetradecaspilotus.

Oblongus, supra pallide flavus, vertice, antennis extrorsum, thoracis maculis quatuor, scutello et elytrorum suturâ maculisque 10 nigris; subtus niger, abdominis limbo pedibusque flavis.

Long. $1\frac{3}{4}$—$2\frac{1}{4}$ lin.

Hab.—Nagasaki.

Head distinctly punctured, parts of the mouth and a small patch at the base of each antenna piceous. Thorax convex, smooth, distinctly punctured, a pair of large roundish patches placed one on either side of the disk, and a second pair, each transversely trigonate, attached to the hinder border of the thorax for nearly its whole length, sometimes confluent with the anterior pair, black. Scutellum semiovate, shining black, impressed with a few small, but deep, punctures. Elytra oblong-quadrate, each rounded at the apex; regularly punctate-striate, the striæ very slightly sulcate, the punctures piceous; interspaces smooth, obsoletely convex; basal and sutural borders, and five spots on each elytron: (two near the base, parallel, the inner one round, the outer one oblong; two, also parallel, placed just beyond the middle, the inner less regularly rounded, the outer broadly oblong, and the fifth transversely rotundate, placed near the apex,) black. Body beneath black; sides and apex of abdomen, together with the legs, pale yellow.

This insect must be placed close to *C. sannio,* Boh.

Cryptocephalus scitulus.

Anguste oblongus, convexus, piceo-fulvus, nitidus, antennis (basi exceptâ) nigris; thorace convexo, nitido sub lente tenuissime et subremote punctato; elytris sat fortiter punctato-striatis, interstitiis incrassatis; utrisque vittâ latâ, a basi fere ad apicem extensâ, nigrâ ornatis.

Var. A. Elytris nigris, margine exteriori angusto vittâque communi, postice angustatâ, ante apicem abbreviatâ, picco-fulvâ.

Long. 2 lin.

Hab.—Hiogo, on oak.

Head coarsely but not closely punctured; face flat; three lower joints pale fulvous, the rest black; antennæ three-fourths the length of the body. Thorax convex, subcylindrical when seen from above, sides converging and slightly rounded from base to apex; surface very shining, stained with piceous. Elytra subquadrate-oblong, sides slightly lobed at the base; surface distinctly punctate-striate, interspaces smooth, convex.

Cryptocephalus pilosus.

Oblongus, convexus, griseo-pilosus, subtus nigro-viridis, metallicus, epipleuris pedibusque viridi-metallicis; supra læte viridi-metallicus, ore rufo-fulvo; antennis nigris, basi fulvis; thorace convexo, ante basin transversim excavato, subcrebre punctato, punctis oblongis; elytris fortiter subseriatim punctatis, punctis piceis; utrisque limbo angusto maculisque tribus (2-1 dispositis) viridi-metallicis.

Long. $2\frac{1}{2}$ lin.

Hab.—Japan, also China; collected in both localities by Mr. Lewis.

Head distinctly but not closely punctured; face plain, clothed with long adpressed griseous hairs; eyes broadly emarginate; antennæ slender, filiform, basal joint stained with metallic green; its under surface, together with the whole of the three following joints, obscure fulvous. Thorax scarcely twice as broad at the base as long; sides regularly rounded and converging from base to apex; above convex, transversely excavated in front of the scutellum, somewhat sparingly clothed with short decumbent hairs; disk rather deeply impressed with oblong punctures. Scutellum trigonate, deeply punctured. Elytra scarcely broader than the base of the thorax, quadrate-oblong; sides feebly lobed at the base; above convex, thickened in the immediate neighbourhood of the scutellum, clothed with suberect hairs; rufo-fulvous, strongly punctured, the punctures piceous, irregularly arranged in ill-defined longitudinal rows (about ten in number), the interspaces also punctured; each elytron with the entire limb and three

large patches, (the first placed below the base, halfway between the suture and the humeral callus, the second on the callus itself, and the third, larger than the others, covering the centre of the disk, just below its middle,) metallic-green.

This species may be separated from *C. ilicis* and its congeners by the pubescence on the surface of the elytra.

Cryptocephalus signaticeps.

Late oblongus, convexus, niger, nitidus, antennis basi fulvis, clypeo, femoribusque ante apicem flavo-albo notatis; thorace elytrisque rufo-testaceis, illo tenuiter punctato, vittis duabus basi dilatatis, a basi fere ad apicem extensis, intus ante medium late emarginatis, lineâque longitudinali a basi ad medium productâ nigris; margine laterali flavo-albo; elytris distincte punctatis, punctis irregulariter dispositis, utrisque lineâ suturali maculisque tribus (2-1 dispositis) nigris.

Long. $2\frac{1}{4}$—$2\frac{3}{4}$ lin.

Hab.—Nagasaki, on the *Alnus Japonica*. I possess also specimens of this species from the coast of Tartary, collected by Mr. A. Adams.

Head black; clypeus marked with a triangular yellowish-white patch; apex of labrum and jaws obscure fulvous; antennæ two-thirds the length of the body; basal joints stained beneath and at the apex with obscure fulvous, second and three following joints fulvous, the rest black. Thorax twice as broad at the base as long; sides obliquely converging from base to apex; surface transversely convex, subconic, finely punctured. Scutellum trigonate. Elytra equal in width to the base of the thorax, parallel; sides feebly lobed at the base; upper surface convex, much more strongly punctured than the thorax, the punctures often piceous; each elytron with the suture and three large spots, viz. two below the base, parallel, and one just below the middle, transverse, black. Legs black; all the thighs marked on the anterior surface, just before the apex, with a yellowish-white spot.

This species must be placed close to *C. cordiger*.

Cryptocephalus instabilis.

Elongatus, parallelus, convexus, niger, nitidus, antennarum basi, clypei maculâ oreque fulvis; thorace distincte punctato, marginibus apicali et laterali (hoc intus emargi-

nato) lineâque longitudinali, ab apice ad disci medium extensâ pallide fulvis; elytris distincte punctatis, punctis irregulariter dispositis; fulvis aut rufo-fulvis, utrisque lineâ suturali maculisque quatuor (2-2 positis) nigris.

Fœm.—Thoracis maculis duabus obliquis, ante basin positis, pallide fulvis.

Var. A. Elytrorum maculis inter se confluentibus.

Var. B. Elytrorum maculis unâ vel alterâ obsoletâ.

Long. 2—2½ lin.

Hab.—Japan, collected by Mr. Moor; without precise locality.

Face punctured, sparingly clothed with adpressed griseous hairs, impressed down the middle with a longitudinal groove; a transverse patch on the clypeus yellowish-white; antennæ robust, nearly three-fourths the length of the body in the ♂, shorter and less robust in the ♀; six lower joints, and the base of the sixth, fulvous; the rest black. Thorax nearly twice as broad at the base as long; sides obliquely converging and very slightly rounded from base to apex; upper surface convex, transversely depressed just before the base, rather closely punctured. Scutellum trigonate, its apex truncate. Elytra parallel; sides feebly lobed at the base, irregularly punctured, each elytron with a sutural line and four spots placed two below the base, parallel, and two just below the middle, also parallel, black. Legs entirely black, with the exception of the coxæ, which are more or less stained with piceous.

This species, which has not been met with by Mr. Lewis, must be placed close to *C. variabilis*.

Cryptocephalus Mannerheimii, Gebl.

Suffr. Lin. Ent. xiv. p. 90.

Hab.—Japan (Mr. Moor); also Southern Siberia.

Cryptocephalus Japanus.

Oblongus, convexus, niger, thorace elytrisque sordide flavo-albis: illo sat crebre punctato, utrinque vittâ latâ intus leviter emarginatâ, vix ante apicem abbreviatâ, punctisque tribus prope latus, triangulariter positis, nigris; elytris consperse punctatis, utrisque lineâ suturali maculisque quatuor (2-2 dispositis) nigris; pygidio apice fusco-flavo.

Var. A. Elytris sordide flavo-albis, lineâ suturali maculâque parvâ humerali nigris.

Long. $3\frac{1}{4}$—4 lin.

Hab.—Yokohama. I have also received it without locality from Mr. Moor.

Var. A. Chusan (Mr. A. Adams).

Face rugose-punctate; punctures rather less crowded on the vertex; antennæ entirely black. Thorax twice as broad at the base as long; sides rounded at the extreme base, thence obliquely converging to the apex; upper surface convex, very faintly depressed in front of the scutellum, somewhat closely impressed with small, but distinct, oblong punctures; on either side the medial line is a broad black vitta, which extends from the base very nearly to the apical margin of the thorax; its inner edge is broadly but slightly, emarginate; placed in a triangle on the middle of the space between this vitta and the lateral margin are three small black spots, the innermost being usually confluent with the vitta. Scutellum narrowly triangular, smooth and shining. Elytra scarcely broader than the base of the thorax, parallel; sides slightly lobed at the base; above convex, thickened in the immediate neighbourhood of the scutellum; distinctly and somewhat closely punctured, the punctures indistinctly arranged in striæ at the base, irregularly scattered over the rest of the surface; each elytron with a narrow sutural line, abbreviated just before reaching the apex, and four large spots black; the latter are arranged as follows: two oblong, placed below the base, the first half-way between the suture and the humeral callus, the second on the callus itself, and two placed transversely below the middle, one sublinear, near the suture, the other larger and irregularly ovate, half-way between the suture and outer margin. In some specimens these patches are larger, and the inner one of the second row is confluent with the sutural line. The small spots on the sides of the thorax are also sometimes confluent.

This insect is very closely allied to *C. Mannerheimii*, Gebler; and also to *C. bivittatus* of the same author.

Cryptocephalus approximatus.

Anguste oblongus aut oblongus, convexus, niger, supra viridi-cæruleus aut cæruleus, metallicus, antennis (basi fulvâ exceptâ) nigris; capite inferiori, coxis, femoribus basi tibiis-

que anticis intus, fulvis; thorace nitido, tenuiter punctato, lateribus apice flavo-albis; elytris sat fortiter consperse punctatis, punctis prope suturam, præsertim apicem versus, subseriatim dispositis.

Mas.—Facie inter oculos maculâ bifurcatâ fulvâ ornatâ; femoribus anterioribus quatuor antice fulvis.

Fœm.—Facie inter oculos immaculatâ; clypeo maculâ viridi-cæruleâ, superficiem plus minus amplectente ornato.

Var. A. *Mas.*—Maculâ inter oculos obsoletâ.

Var. B. *Fœm.*—Clypeo toto (margine inferiori excepto) viridi-cæruleo.

Long. 2—2½ lin.

Hab.—Nagasaki, on Spanish Chestnut; apparently common.

Head punctured, front impressed with a longitudinal groove; antennæ in the ♂ equal in length to the body, shorter in the ♀; four lower joints obscure fulvous, stained with piceous above, the rest black. Thorax twice as broad at the base as long; sides rounded at the extreme base, thence obliquely converging and slightly rounded to the apex; disk convex, minutely, but not closely, punctured; the interspaces shining, impunctate; extreme lateral margin edged on its anterior half with yellowish-white in the ♂ (in some specimens a faint trace of the same colour is seen along the whole length of the border); in the ♀ the border is concolorous with the disk, the anterior angles alone being yellowish-white. Scutellum subpentagonal. Elytra parallel, not broader than the base of the thorax, sides moderately lobed at the base; above convex, conjointly excavated below the scutellum, coarsely punctured, the puncturing on the inner disk indistinctly arranged in longitudinal striæ; interspaces on the anterior half of the surface transversely wrinkled. Body beneath black, clothed with adpressed hairs; coxæ and the extreme bases of the thighs fulvous in both sexes; the extent of this colour varies greatly; the coxæ frequently stained with piceous, anterior tibiæ sometimes entirely black.

Very closely allied to *C. cærulescens;* larger and more robust; the colouring of the lower portion of the face and the form of the ♂ organ also different.

Cryptocephalus fortunatus.

Anguste oblongus, convexus, supra viridi-, aut cæruleo-metallicus, æneo-micans, antennis nigris, his basi, facie inferiori plagâque bifurcatâ inter oculos flavis, thoracis

marginibus laterali et apicali elytrorumque lateribus basi, flavo-albis; thorace convexo, nitido, ante basin obsolete transversim depresso, tenuiter et remote punctato; elytris fortiter, consperse punctatis, punctis apicem versus subseriatim dispositis; interstitiis ante medium transversim rugulosis; subtus niger, epimeris anticis pedibusque fulvis, femoribus dorso, tibiis margine exteriori tarsisque picco-tinctis.

Var. A. *Fœm.*—Thoracis margine apicali flavo-albo obsoleto.

Var. B. Pedibus totis fulvis.

Long. $2\frac{1}{2}$—3 lin.

Hab.—Hiogo, Japan; also Chusan, brought over by Mr. A. Adams.

Head distantly punctured, impressed on the front with a longitudinal groove, the lower half of the face, and a bifurcate patch, the branches of which extend upwards on either side to the inner and upper angle of the eye, fulvous; antennæ equal to the body in length in the ♂, shorter in the ♀, four lower joints fulvous, the rest black. Thorax rather more than twice as broad at the base as long, sides rounded and converging from base to apex; above convex, slightly and transversely depressed in front of the scutellum, disk shining, impressed with very fine, remote punctures, which are visible only under a lens. Elytra coarsely punctured, the punctures near the suture arranged in ill-defined striæ.

This species may be separated from *C. Kulibini*, the only insect with which it can be confounded, by the bright, shining, nearly impunctate thorax, and by the yellow line running along the basal half of the lateral border of the elytra.

Cryptocephalus permodestus.

Anguste oblongus, convexus, viridi-cyaneus, metallicus, antennis nigris, his basi, facie inferiori trochanteribusque flavis; thorace convexo, fortiter subcrebre punctato; elytris fortiter punctato-striatis, interstitiis hic illic tenuiter impresso-strigosis.

Long $1\frac{2}{3}$ lin.

Hab.—Nagasaki.

Very nearly allied to *C. fulcratus*. At once to be known from that insect by the convex, deeply punctured thorax. Forehead and upper half of face rugose, closely and deeply punctured; clypeus and face on either side pale

yellow; antennæ longer than the body, slender, filiform, third joint distinctly shorter than the fourth, four basal joints yellow, stained above with piceous; labrum shining black; jaws piceous. Thorax nearly twice as broad at the base as long; sides very slightly sinuate in the middle, obliquely converging from base to apex, more quickly converging at the extreme apex, the outer margin faintly and irregularly notched, anterior angles armed with a short, slightly reflexed tooth; upper surface convex, covered with large deeply impressed punctures; lateral edge broadly margined, its surface rugose. Scutellum narrowly triangular, smooth, impressed with a few deep punctures. Elytra deeply punctate-striate, interspaces smooth, slightly thickened towards the apex, impressed here and there with very faint irregular striæ.

Cryptocephalus amatus.

Anguste oblongus, convexus, obscure viridi-cæruleus, metallicus, subtus nigro-cæruleus, facie inferiori flavo, antennis nigris, basi obscure fulvis, ore piceo; thorace convexo, disco utrinque pone medium late sed leviter excavato, fortiter punctato, punctis ad apicem et latera versus subcrebre—disco magis remote—dispositis; elytris fortiter punctato-striatis, interstitiis leviter elevatis, irregulariter elevato-strigosis.

Long. 2 lin.

Hab.—Japan, a single specimen, collected by Mr. Moor.

Head above the insertion of the antennæ deeply punctured, front impressed with a longitudinal groove; clypeus and the face on either side flavous; antennæ equal in length to the body, filiform, the third joint scarcely two-thirds the length of the fourth; four lower joints obscure fulvous, stained with piceous above. Thorax twice as broad at the base as long; sides rounded and converging from just before the base to the apex, anterior angles armed with an obtuse tooth, lateral margin entire; above convex, deeply but less coarsely punctured than *C. permodestus*, the punctures somewhat crowded at the apex and on the sides, more distant on the disk, hinder half of the latter broadly but faintly excavated on either side the medial line; lateral border broadly margined, its surface rugose. Elytra deeply punctate-striate, interspaces slightly thickened, covered with coarse ill-defined irregular transverse wrinkles.

The present insect differs from *C. flavilabris*, the species to which it is most closely allied, by the deeply punctured striæ on its elytra.

Whilst *C. fortunatus* and *approximatus* represent in Japan *C. nitidulus* and its allies, *C. permodestus* and *amatus* replace *C. flavilabris*, *fulcratus* and *janthinus*.

Cryptocephalus discretus.

Subelongatus, antice angustatus, subcylindricus, niger, antennis basi flavis, ore, thoracis margine antico pedibusque quatuor anticis obscure fulvis, posticis piceis; thorace elytrisque nigro-cæruleis, metallicis, illo evidenter minus remote punctato, utrinque transversim depresso; his fortiter punctato-striatis, interstitiis lævibus, convexis.

Var. A. Thoracis margine antico disco concolore.

Var. B. Femoribus intermediis dorso infuscatis, thorace ut in Var. A.

Long. $1\frac{1}{3}$ lin.

Hab.—Var. B, Tsu Sima (Adams); the type and Var. A from Chusan, collected in both localities by Mr. A. Adams.

Head smooth, finely and remotely punctured, lower half of clypeus and mouth obscure fulvous; cheeks and five lower joints of antennæ yellow, sixth and seventh joints pale piceous, the rest black. Thorax twice as broad at the base as long, sides obliquely deflexed and nearly parallel on their hinder half, thence slightly rounded and obliquely converging to the apex; basal margin very slightly concave on either side, basal lobe scarcely produced, broadly truncate; upper surface convex, transversely depressed on either side on the middle of the outer disk, distinctly but not very closely punctured. Scutellum large, trigonate, shining black. Elytra oblong, equal in width to the thorax at the base, gradually increasing in width from thence to beyond their middle, thence broadly rounded to the apex; above convex, strongly punctate-striate; interspaces slightly convex on the inner disk, strongly raised and subcostate on the outer disk and towards the apex of the elytron.

Near *C. pallifrons*, larger and more deeply punctured.

Cryptocephalus amiculus.

Elongatus, subcylindricus, nigro-piceus, facie inferiori, antennis basi pedibusque flavis; thorace nitido, sub lente minute punctato; elytris sulcato-striatis, striis sat fortiter punctatis, punctis oblongis, interstitiis convexis.

Long. $1\frac{1}{4}$ lin.

Hab.—Nagasaki; a single specimen in Mr. Lewis's collection; I also possess two specimens from the Angara River, Eastern Siberia.

Lower portion of the face flavous; five lower joints of antennæ the same colour, six outer joints nigro-piceous; forehead slightly swollen, finely but distantly punctured when seen under a lens, impressed in the middle with a faint longitudinal groove. Thorax nearly twice as broad at the base as long, sides at the base subparallel, thence obliquely converging and slightly rounded to the apex, hinder angles produced posteriorly, acute; above convex, minutely punctured. Scutellum trigonate. Elytra not broader than the base of the thorax, parallel in front, slightly narrowed towards the apex; sides feebly lobed at the base, above convex, sulcate-striate, the sulci each impressed with a single row of oblong punctures; interspaces thickened, subcostate.

This species will come into the same group as the preceding.

Genus Pachybrachys, Chevr.

Suffr. Lin. Ent. iii. 111.

Pachybrachys eruditus.

Anguste oblongus, subcylindricus, subtus niger, supra sordide fulvo-flavus, antennis extrorsum nigris; thorace ante basin transversim depresso, fortiter piceo-punctato, signaturâ nigro-piceâ literam M mentente ornato; elytris fortiter punctatis, punctis piceis, fortiter impressis, subseriatim dispositis, interstitiis apicem versus leviter incrassatis.

Long. $2\frac{1}{2}$—3 lin.

Hab.—Nagasaki; Lepideza.

Head strongly punctured, the punctures piceous, the vertex, a longitudinal stripe on the front, a small space at the base of the antennæ, together with the anterior edge of the clypeus, pitchy black; antennæ slender, the six outer joints black, the rest fulvous, stained above with

piceous. Thorax more than twice as broad as long; sides rounded, obliquely converging before the middle; disk transversely convex, transversely depressed in front of the scutellum, strongly impressed with large piceous punctures; on the disk is a large, ill-defined, pitchy-black marking, often interrupted, which resembles somewhat the capital letter M. Scutellum black, its disk flavous. Elytra not broader than the thorax, parallel, sides slightly lobed at the base; above convex, deeply impressed with round pitchy-black punctures, which are arranged in irregular longitudinal rows; the interspaces towards the apex, where the striæ become nearly regular, are slightly convex; the suture is edged with a very narrow black line. Tarsi more or less stained with fulvous.

APR 30 1874

V. *On some new species of* Butterflies *discovered in Extra-Tropical Southern Africa.* By Roland Trimen, F.L.S., &c.

[Read 2nd December, 1872.]

In the paper which I have now the pleasure of submitting to the Entomological Society there will be found descriptions of fourteen new species of *Rhopalocera*, viz.—three *Satyrinæ*, two *Nymphalinæ*, five *Lycænidæ*, and four *Hesperidæ*. In the first-named sub-family, *Mycalesis perspicua* is interesting as belonging rather to the Asiatic than to the African section of the genus. The *Nymphalinæ* afford two striking instances of "mimicry;" the one of a *Danais* by a *Diadema*, the other of an *Acræa* by a *Pseudacræa*. Among the five *Lycænidæ*, the little *Aphnæus pseudo-zeritis* is remarkable for combining the colouring and ornamentation of two nearly-allied genera, and *Liptena Aslanga* is a noteworthy addition to a very aberrant group, hitherto only known as characteristic of Tropical Western Africa. Two of the *Hesperidæ* present characters of interest, *Cyclopides Meninx* being not distantly allied to the South American *C. Menes*, Cramer, and *C. Barberæ* possessing under-surface markings very dissimilar from those of its congeners.

For a knowledge of these welcome additions to entomological science, I am indebted to many of the friends whose valued assistance enabled me to record so many new species and facts in *Rhopalocera Africæ Australis* and papers subsequently published, as well as to others with whose work I have more recently been so fortunate as to be made acquainted. Among the latter I should specially mention Mr. Walter Morant and Mr. H. C. Harford, who not long since resided in Natal, and who, in addition to collecting insects with remarkable zeal and success, kept careful records and drawings of their discoveries. Dr. Seaman, Secretary to the Natural History Association of Natal, has been similarly zealous in the cause, and I trust shortly to communicate to the Entomological Society his and Mr. Harford's very valuable accounts of the larvæ and pupæ of many Natalian butterflies.

Family NYMPHALIDÆ, Swains.

Sub-family SATYRINÆ, Bates.

Genus LEPTONEURA, Wallengren.

Leptoneura Dingana, n. sp. (Pl. I. fig. 1.)

Exp. 2 in. 1 lin.

Dark brown. Forewing: beyond middle a curved macular *fulvous-ochreous band* between sub-costal nervure and 2nd median nervule, the three upper spots united and forming a sub-apical bar; contiguous to outer edge of bar, a compound black ocellus tripupillate with bluish-white. *Hindwing:* a sub-marginal row of 5 unipupillate black ocelli in strongly-marked, fulvous-ochreous rings, of which the 1st is between the sub-costal nervules, and the 5th between 2nd and 1st median nervules; an indistinct and minute 6th ocellus close to anal angle. UNDERSIDE.—*Dull fuscous brown, with very indistinct markings. Forewing:* only a faint trace of fulvous band; compound ocellus smaller than above, ill-defined, but the three pupils conspicuous. *Hindwing:* the 6 ocelli present, but without fulvous rings; before them indistinct traces of an irregular transverse streak, darker than ground-colour; beyond them two indistinct, parallel, hind-marginal dark streaks.

This species exhibits unmistakable affinity to *L. Bowkeri*, Trimen (*Trans. Ent. Soc. Lond.*, 1870, p. 347, pl. vi. f. 2), but is readily recognized by the *fulvous* band and very much larger compound ocellus of the forewings; the whole ground-colour is also more rufous than that of *Bowkeri*, and the underside markings much more obscure. It should be noted, however, that the ♀ of *Bowkeri* remains unknown, and that the differences presented by the only known specimen of *L. Dingana* (the sex of which I have been unable to determine) are not greater than may be observed between the sexes of other *Satyridæ*. The example described was taken by Mr. Walter Morant, at Malang Spruit, between the Movi and Bushman's Rivers, in October, 1868; it flew low, and settled on rocks and on the ground, with the wings open.

Hab.—Malang Spruit, Natal. In the collection of R. Trimen.

Genus Erebia, Dalman.

Erebia irrorata, n. sp. (Pl. I. fig. 2.)

Exp. (♂) 1 in. 5 lin.; (♀) 1 in. 6 lin.

Pale greyish-brown. Forewing: a fulvous patch occupies discoidal cell, not rising above it, but extending beyond it and over median nervules to about their middle, as well as below median nervure and its 1st nervule, but not reaching sub-median nervure or quite to base; touching extremity of upper portion of patch, a bipupillate black ocellus in a pale yellowish-grey ring; *costal margin indistinctly hatched with greyish-yellow* from base to beyond middle. *Hindwing* without markings. Underside.—*Hindwing and costal and apical region, with hind margin of forewing irrorated with greyish-yellow. Forewing:* fulvous patch slightly smaller than on upperside; ring of ocellus paler, more distinct. *Hindwing:* beyond middle a submarginal row of 8 ill defined greyish-yellow spots; preceding 4th spot, and between it and extremity of discoidal cell, a similar spot; an indistinct similar spot near base, between median and sub-median nervures; two smaller ones on edge of cell, marking origins of radial and 2nd sub-costal nervules; and 2 or 3 small ones on costa before middle. *In both wings*, on hind-marginal edge, a row of small, inter-nervular, greyish-yellow spots, more apparent in hindwing than in forewing.

The sexes do not differ, except that the irrorations and spots of the underside of the wings are more conspicuous in the ♀.

This species stands nearer to *E. Hyperbius*, Linn., than to any other South African *Erebia;* but it differs from the latter in its much paler colouring throughout, its total want of any ocelli or fulvous colouring on the upperside of the hindwings (in which respect it is like *E. Naryria*, Wallengren), its hatching of greyish-yellow on the upperside of the costa of the forewings, its much yellower and more distinct underside hatching and irroration, and its want of the two transverse ferruginous striæ on the underside of the hindwings.

Mr. J. H. Bowker discovered a ♀ of this butterfly in the Zwaarte Ruggens, division of Uitenhage, in the month of August, 1870; and, quite recently (July, 1872), forwarded a ♂ captured on the road from Bethulie to Burghersdorp, on the Colonial side of the Orange River. These are the only examples that I have seen.

Hab.—Uitenhage and Albert Divisions, Cape Colony. In the collection of R. Trimen.

Genus Mycalesis, Hübn.

Mycalesis perspicua, n. sp. (Pl. I. fig. 3.)

Exp. 1 in. 8 lin.

Pale brown, with very clearly marked, white-pupillate, black ocelli in yellow-ochreous rings; common to both wings, a slightly paler shade of ground-colour beyond an indistinct line about middle, and three parallel, hind-marginal, dark lines, of which the outermost is on the edge next to cilia. *Forewing:* a small ocellus between radials; a large one on 2nd and 1st median nervules, its ring extending above and below those nervules respectively. *Hindwing:* 2 good-sized ocelli between 3rd and 1st median nervules; a small one above 3rd median nervule; occasionally, a minute indistinct ocellus near anal angle. Underside.—*Pale greyish-ochreous, closely hatched and irrorated with brown;* two reddish-brown transverse lines, one before, the other beyond middle; the outer line immediately succeeded by *a conspicuous pale yellow stripe*, externally ill-defined; hind-marginal streaks well-marked; all the ocelli in well-marked rufous-brown rings encircling the yellow-ochreous rings. *Forewing:* the two ocelli answer to those on upperside. *Hindwing:* 7 ocelli in sub-marginal row, of which the 4th and 5th (between 3rd and 1st median nervules) are considerably larger than the rest, the three above them small (about equal in size), and the 7th (at anal angle) much the smallest, but clearly defined.

A ♀ taken at St. Lucia Bay by the late Colonel Tower has all the ocelli on the underside of the wings indistinctly marked, and much smaller than usual; the yellow stripe beyond middle deeper in tint; and the transverse line before middle immediately preceded by some yellow clouding.

The close brown lines or hatchings and conspicuous pale yellow stripe of the underside readily distinguish this butterfly from *M. Evenus*, Hpfr., apart from its much paler colouring on the upperside. Its nearest allies are *M. Meneris*, Linn., and *M. Ostrea*, Westw. (= *Otrea*, Hübn. *nec* Cram.); but it differs from the former by the much broader stripe of the underside, and from both by the number (3) and distinctness of the ocelli on the upperside of the hindwings.

I first met with this *Mycalesis* (which seems nearer to the Chinese and Indian species just mentioned than to any of its African congeners) at Port Natal, where I took a single ♀ specimen on the 3rd August, flitting about long grass in some rough ground at the base of the Botanic Garden, near D'Urban. On the 4th March, 1867, I again met with the species, capturing one of each sex among grass at the bottom of a deep ravine at the Mapumulo Mission Station, between the Umvoti and Tugela Rivers, in Natal. During the same year the ♀ variety above mentioned was taken at St. Lucia Bay, and Mr. H. C. Harford has since forwarded me a ♂ captured on the 29th January, 1869, "among long grass by a river side," near Pinetown, in Natal. These five examples are the only ones which have come under my notice.

Hab.—Natal and St. Lucia Bay. In the collection of R. Trimen.

Sub-family Nymphalinæ, Bates.

Genus Diadema, Boisd.

Diadema deceptor, n. sp.

Exp. 3 in. $3\frac{1}{4}$ lin.

♂. *Black, with white* (*very slightly pink-glossed*) *markings. Forewing:* costa dusted with pale-bluish scales near base; a small rounded spot in discoidal cell near base; an irregular, oblique central bar, consisting of a narrow cellular stripe and a large ovate patch lying mainly between 2nd and 1st median nervules (but extending slightly above the former and considerably below the latter nervule); a narrow sub-apical stripe of 3 spots, extending from a little below costa to 3rd median nervule (the lowest spot largest); a small spot near apex, and a similar one near anal angle, just above sub-median nervure. *Hindwing:* in basal region a large, sub-rotundate patch, not reaching base, and scarcely extending above subcostal nervure, but spreading indistinctly to inner margin, and projecting outwardly between radial and 3rd median nervules; outer edge of patch indented by black between nervules; a sub-marginal row of 4 minute whitish spots, between 1st sub-costal and 2nd median nervules—that nearest costa less indistinct than the rest; beyond them, but towards anal angle, very faint traces of a hind-marginal, lunulate, whitish streak. Underside.—*Hindwing, and costal and apical border of forewing, pale, glossy, greyish-brown. Forewing:* violaceous-pink lustre

over white markings more observable than on upper side; 3 additional white spots at base; sub-apical stripe commencing on costa with a broad white mark; brown border commencing at base, extending widely along costa so as to cover upper portion of discoidal cell (irrorated with whitish scaling on each side of costal nervure), and occupying apical region to below extremity of 3rd median nervule; some faint whitish irroration on costa near apex just above white spot; and some (rather stronger) at lower extremity of sub-apical stripe; a double row of hind-marginal white lunules; a blue tinge over the black ground-colour, especially on the edges of the large central marking of the anal-angular spot and of a minute spot above the latter. *Hindwing:* basal lobe dull-white; this dull-white extends beyond precostal nervure; an orange dot and a white dot at origin of costal and median nervures; white patch duller than on upper side, larger and more irregular in outline, widening so as to occupy inner-margin to its edge as far as in a line with end of abdomen, and emitting a conspicuous ray upward to apex from between the sub-costal nervules; from outer angle of patch there extends some dense whitish irroration, on each side of 3rd median nervule, as far as hind-marginal lunules; 5 distinct dots in sub-marginal row; two rows of hind-marginal lunules, thin, distinct, almost continuous throughout.

Palpi and legs of the same greyish-brown as the underside of hindwings and of great part of the forewings.

This *Diadema* is one of the puzzling series of very closely allied forms that includes *D. Anthedon*, Doubl., *D. dubia*, De Beauv., *D. mima*, mihi, etc. It completes the list of striking mimetic analogies between the known African *Danaides* and *Diademæ*, by presenting an unmistakeable mimicry of *Danais Ochlea*, Boisd., a local species inhabiting the coast of Natal and St. Lucia Bay. All the white markings in the *Diadema* are in proportion smaller than in the *Danais*, and the central bar of the forewings is more obliquely placed; while on the underside the grey colouring is paler, and the hindwings want the narrow basal black of *Ochlea*, and present a pale ray (from the central patch to the apex) which is not found in the latter.

D. deceptor is intermediate in character between *D. mima* and *D. Anthedon*, but is on the whole nearer to the former, both in size and markings; though the ab-

sence of any ochreous tinge in the white bars and the pinkish gloss of those markings, added to the width of the central bar of the forewings, approximate the insect to the latter.* The white spots of the head, palpi, and back of thorax, are identical in the three species, and a tuft of ochreous hairs on the posterior region of the breast is also found in all of them.†

The only example of this interesting *Diadema* known to me was taken by Mr. W. Morant, in a road cut through thick bush, about the middle of July. In reply to an inquiry from me, that gentleman states that the place of capture was one in which he had sometimes found *Danais Ochlea*.

Hab.—Victoria County, Natal.—In the collection of W. Morant.

Genus Pseudacræa, Westw.

Pseudacræa imitator, n. sp.

Exp. 2 in. 11½ lin. and 3 in. 2½ lin.

Fuscous, with yellowish-white bands. Forewing: an oblique, narrow, sub-apical band, tolerably even and con-

* In the South African Museum there is an unusually small ♂ *Diadema mima* (*exp. al.* 3 *unc.*) which was received from Natal, and which presents several characters tending in the direction of *D. deceptor*. All the pale markings of the forewings are proportionately larger than usual, and the patch of the hindwings is white, with an ochreous edging only. On the underside the colouring is that of *D. mima*, but there is a very faint trace of the pale ray which distinguishes *D. deceptor*.

† With regard to the intimate affinity so apparent among the mimicking African *Diademæ*, I wish to place on record that *D. mima*, ♂, and *D. Anthedon*, ♀, were taken *in copulâ* by Mr. H. C. Harford, in a wood on the Little Umblanga River, in Natal. On the receipt of the specimens so captured, I at first imagined that *Mima* and *Anthedon* would turn out to be the constant sexes of one species; but having subsequently examined with care all the specimens to which I have had access, I find that both sexes of each form exist. Of *Mima* I have determined (from a comparison of the fore-legs with those of the sexes of *D. Misippus*) 11 ♂s and 5 ♀s, and of *Anthedon* (in the same manner) 14 ♂s and 6 ♀s. On examining the West African *D. dubia* and *D. Anthedon* in the British Museum, I found in like manner 2 ♂s and a ♀ of each form. The case of the African *Diademæ* of this section (*Euralia*, Doubl.) is a very remarkable one; for, unstable as their pseudo-specific characters would appear to be, they are unstable only in the direction of mimicking the peculiar *Danaides* (sect. *Amauris*, Hübn.) inhabiting the same regions, following and reproducing even the slightest variations presented by the latter butterflies. It is scarcely possible to doubt that these *Diademæ* are divergent forms of one parent species; and, looking to their present paucity of numbers, and to their apparent dependence for very existence on closely copying every form presented by the abundant *Danaides*, the idea suggests itself that some advantage to them might result from such an instability of type as that to which unions between such different forms as *Mima* and *Anthedon* would in all probability lead.

tinuous, slightly broader inferiorly, crossed by three nervules, extending from a little below costa as far as 2nd median nervule; on inner-margin, beyond middle, a small space inconspicuously irrorated with yellowish-white; 5 black spots in discoidal cell, the largest one at base, and enclosing a small white spot; 2, rather smaller, nearer to base than to extremity of cell, placed very obliquely, so that the lower is wholly beyond the upper; and 2, smaller than the 2 central ones, still more obliquely placed at outer end of cell, the lower being on 2nd disco-cellular nervule; 2 small black spots just below cell, 1 at base, immediately preceded by a white dot; the other about as far from base as 2nd cellular spot; a bluish-bronzy gloss along costa and over basal and inner-marginal region, strongest on inner-marginal edge. *Hindwing:* a rather broad, central, transverse band, rather straight, and of even width except near costa, where it is rather narrowed and obscured; a good-sized black spot at base, marked (on origin of median nervure) with a whitish dot, and surmounted towards costa by a whitish spot; 2 black spots obliquely placed in discoidal cell near base; 2 above cell, one on each side of 1st subcostal nervule; 1 immediately below cell, close to base; one (small and thin) on the almost atrophied nervule closing cell; and one (minute) just outside cell above the radial nervule; the 2 spots last mentioned are within the white transverse band. *In both wings*, inter-nervular black rays extend from hind-marginal edge to exterior of white band; in *hindwing* piercing the band to some depth. Underside.—*Much paler; outer halves of wings ochreous-grey;* spots near base as on upperside, but much more conspicuous; pale bands with less distinct outline, that of hindwing narrower; in each wing an additional white spot at origin of costa. *Forewing*: inner-marginal whitish space more apparent, but still ill-defined; a faint basal tinge of fulvous below cell. *Hindwing:* all the basal ground-colour before transverse band *ferruginous-fulvous*, with a faint violaceous gloss.

Antennæ black; *palpi* black above, laterally and beneath yellow; *head*, *thorax*, and base, broad dorsal line, and segmental incisions of *abdomen*, black. *Head* with 6 white spots (2 on front, 2 on summit, and 2 behind the eyes); *collar* with 2; *thorax* with 8; base of *abdomen* with 2; *breast* with traces of several (both examples rubbed). *Abdomen* with sides and under-surface ochre-yellow.

The only specimens which I have seen both appear to be of the female sex, the fresher and more perfect of the two having the bands much more decidedly tinged with yellow than the other. The species is nearly allied to *P. Hirce*, Drury, judging from a comparison of the two specimens with Mr. Hewitson's figure of the typical form of the ♀ *Hirce* (*Eurytus*, Clerck) from Calabar.* It may, however, be readily distinguished from the latter by the absence in the *forewings* of the conspicuous white band which in the ♀ *Hirce* extends from the inner-margin towards the sub-apical band; and by the fuscous base of the *hindwings*, which in the ♀ *Hirce* is occupied by the white of the band. In *P. imitator* the sub-apical band of the forewings is much longer and narrower, and the 2nd and 3rd cellular spots are in all the wings nearer to the base.

Mr. H. C. Harford, now of H.M. 99th Regiment, took a single specimen, on the 21st January, 1868, in a narrow bush-path near the Little Umblanga, and describes it as settled on the ground, with the wings expanded, sucking moisture from the damp sand. The only other example known to me was captured by Mr. Walter Morant, on the 8th June, 1869, near Pinetown: it is noted by him as flying near the ground on a hillside in the vicinity of thick bush. Mr. Harford observes that these two individuals were the only ones ever seen by him.

P. imitator is a close mimicker of *Acræa Aganice*, Hewitson, ♀, † differing principally in the forewings, in the minor features of possessing some black spots near the base, and a slight inner-marginal whitish suffusion, and of wanting a separate white spot at the extremity of the sub-apical bar. The spots at the base of the hindwings are not so numerous as in the *Acræa;* and the palpi are yellow, instead of black spotted with white. The spotting of the head, thorax, and base of abdomen, is almost identical in the two insects; and in both the abdomen is ochreous on the underside, while the ochreous abdominal spots and

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* Exot. Butt., IV., *Diadema* III., f. 11 (Part 66, April, 1868).

† I have previously described (*Trans. Ent. Soc. Lond.*, 1868, pp. 79–81, pl. v., f. 3; and *Trans. Linn. Soc.*, vol. xxxvi., p. 516, pl. xlii., f. 2) another species of the genus *Pseudacræa* (*Panopea*, Hübn.), which copies the ♂ *Acræa Aganice* so well as to deceive the collector, viz.: *P. Tarquinia*, mihi; but in that species there is an evident inclination, especially in the yellow-banded ♀, in the direction of mimicking the common *Danais Echeria*, Stoll.

rings of *Aganice* are roughly represented by the general ochreous lateral colouring in the *Pseudacræa*.

Hab.—Natal (Pinetown).—In the collections of H. C. Harford and W. Morant.

Family LYCÆNIDÆ, Leach.

Genus Iolaus, Hübn.

Iolaus Aphnæoides, n. sp.

Exp. (♂) 1 in. 2 lin.; (♀) 1 in. 2½ lin.

♂. *Pale-blue; the forewings broadly bordered with blackish. Forewing:* blackish border tolerably broad from base along costa, very wide in apical region, and narrowing to anal angle. *Hindwing:* sexual patch on costa not strongly marked, dull-greyish, glistening; beyond middle, traces of two sub-oblique blackish streaks running to anal angle; on hind margin, a sharp projecting point at end of 2nd median nervule, and tails at ends of 1st median nervule and sub-median nervure moderately long; on hind margin a blackish spot on each side of 1st median nervule, that on the lower side edged with pale-yellowish both anteriorly and posteriorly. Underside. —*White, with orange-ochreous, blackish-edged, rather broad, transverse stripes; common to both wings are* (1) a basal stripe, which in *hindwing* runs parallel to and very near inner margin to a point a little before anal angle; (2) a stripe before middle, which from costa of *forewing* extends as far as 1st median nervule rather beyond middle of *hindwing;* (3) a stripe about middle, which, after leaving costa of *forewing*, is abruptly interrupted from 1st median nervule as far as inner margin, but in *hindwing* extends from costa straight to extremity of basal stripe before anal angle; (4) a row of small black spots (6 in each wing) a little before hind margin; and (5) a rather wide, orange-ochreous, hind-marginal edging, becoming obsolete at end of 2nd median nervule. *Forewing:* beyond middle, an additional stripe from costa extending in the direction of anal angle, but becoming obsolete just beyond 1st median nervule. *Hindwing:* at anal angle a black spot, from which runs a narrow black streak for a little way along inner-margin.

♀. *Hindwing and outer portion of forewing white;* in both wings, basal region to a little beyond middle clouded with pale-blue, and nervules clouded with blue and blackish

mixed. *Forewing:* a rather strongly-marked fuscous streak closing cell. *Hindwing:* a broad blackish streak corresponding to third transverse stripe of underside; a sub-marginal row of spots corresponding to those of underside, but smaller. UNDERSIDE.—Quite as in ♂.

The forehead is orange-red in both sexes.

Described from a single specimen of each sex, taken on a small tree at the edge of scattered bush about the base of Woest Hill, near Grahamstown, by Mr. James, in October or November. Both examples are considerably worn.

Hab.—Grahamstown.—In coll. Grahamst. Mus.

Genus APHNÆUS, Hübn.

Aphnæus Phanes, n. sp. (Pl. I. figs. 4, 5.)

Exp. (♂) 1 in. 1½ lin.; (♂) 1 in. 3½ lin.—1 in. 5 lin.

♂. *Fuscous, shot with rich purple; forewing with yellow-ochreous markings. Forewing:* the purple gloss covers inner-marginal region, but extends upward only as far as median nervure and its second nervule; costa rather broadly marked with dull ochreous at and near base; an almost square marking in discoidal cell near extremity; beyond cell, near costa, an irregular roughly V-shaped marking; a narrow, sub-marginal, irregular stripe commencing close to apex, more or less distinctly interrupted on 3rd median nervule, and ending on 1st median nervule. *Hindwing:* purple gloss does not extend above sub-costal or below sub-median nervure, but covers the space between those nervures from base to hind-marginal edge; a hind-marginal whitish streak from radial to anal angle; on either side of sub-median nervure, a hind-marginal black spot dotted with silvery; just before the space between these two spots, an indistinct yellow-ochreous mark; tails black, ochreous at base and white at tip. Cilia white. UNDERSIDE.—*Metallic silvery-white, with dull-ochreous, mesially silvery-streaked, narrowly black-edged, broad transverse bands. Forewing:* base narrowly suffused with yellow-ochreous, inner margin widely with pale grey; 3 transverse bands commence on costal edge; the first, before middle, short, straight, ending a little below median nervure; the second, long, oblique, commencing about middle, extending in direction of anal angle, but becoming obsolete above sub-median nervure; the third, near apex, rather

short, ending abruptly between 3rd and 2nd median nervules, where it touches the second band; between second and third bands a costal spot of the same colouring; a fourth band (not marked with silvery) occupies hind margin, and is traversed by an interrupted black line, which is inwardly bordered by white sub-lunulate marks, both line and marks being strongest at sub-median nervure, where they abruptly terminate. *Hindwing:* a basal and inner-marginal band, irregularly dentate on its edges, leaving a very narrow inner-marginal edging of white; a second band, continuous of first band of forewing, crossing obliquely from costa about middle to a little distance before anal-angular lobe, where it narrows and coalesces with extremity of inner-marginal band; a third band, running parallel to the second, is confluent at apex and about middle of hind margin, with a hind-marginal band similar to that of forewing, and near anal angle with the second band; no black traversing line in hind-marginal band, but the white markings more continuous than in forewing.

♀. *Without purple gloss; yellow-ochreous markings in both wings;* basal region of wings irrorated with light-bluish scales. *Forewing:* all the markings much more developed than in ♂; the quadrate cellular marking more or less indistinctly produced into an oblique band, which, on sub-median nervure beyond middle, meets the extremity of the variable but uninterrupted sub-marginal stripe; the much-enlarged V-shaped sub-costal marking beyond middle is prolonged to join sub-marginal stripe on 2nd median nervule (in two specimens it is confluent with the stripe). *Hindwing:* inner-marginal region from base clothed with light-bluish hairs; a narrow sub-marginal yellow-ochreous stripe, commencing indistinctly about 1st sub-costal nervule, is joined between 3rd and 2nd median nervules by an oblique, wider stripe of the same colour commencing on 1st sub-costal nervule, about middle. Underside.—As in ♂, but the transverse bands paler, and inclining to an orange-ochreous tint; whitish lunulate marks in hind-marginal border much enlarged and suffused. *Forewing:* extremity of third band does not meet the second band. *Hindwing:* the inner-marginal band is externally more irregularly dentate than in ♂, a small portion at origin of 1st median nervule forming a separate spot.

This *Aphnæus* is distinguished from all its congeners by *the silvery-white ground colour of the underside* of the wings. The arrangement of the bands of the underside

comes nearest to that presented by *A. caffer*, Trimen. On the upperside the ♂ is further remarkable for its rich-purple instead of violaceous-blue gloss, and the ♀ for the great development of the yellow-ochreous markings (particularly in the hindwings).

Mr. J. H. Bowker sent me a ♀ of this beautiful species from the Vaal River, Griqualand West, in July, 1871, and has since forwarded three ♂s and three ♀s from Klipdrift on the same river.* He notes the habits of the insect as closely resembling those of *A. caffer*.

Hab.—Vaal River, Griqualand West. In the collection of R. Trimen.

Aphnæus pseudo-zeritis, n. sp. (Pl. I. fig. 6.)

Exp. 11 lin.

♂. *Fuscous, glossed with metallic blue. Forewing:* blue forms a patch on inner margin, rising only very little above 1st median nervule, and not entering discoidal cell or extending much beyond middle. *Hindwing:* blue occupies greater part of wing from base to hind margin, leaving a broad costal and narrower inner-marginal fuscous border; a good-sized fulvous-ochreous spot at anal angle, marked exteriorly by 2 black dots, and interiorly by a few minute brassy scales. UNDERSIDE.—*Dull, pale greyish-ochreous, with sub-quadrate, darker spots centred with glittering brassy scales. Forewing:* 5 spots in discoidal cell, irregularly placed, the elongate one at extremity and the spot nearest to it being considerably larger than the other 3; a row of 3 minute brassy dots along costal edge near base; beyond the latter, 4 small elongate spots form a curved row, near costal edge, from 2nd cellular spot to a little beyond middle; an irregular transverse row of about 6 spots beyond middle, of which the first three are distinct and well-separated, but the lower ones confluent, larger, and indistinct; 2 parallel rows of 6 spots each along hind margin, the outer row on hind-marginal edge, and consisting of smaller spots than those of the inner row; a short,

* Accompanying these specimens were three ♂s of *Aphnæus Ella*, Hewitson (*Ill. D. Lep.* ii. *Lycæn.*, pl. 25, f. 6), from the same locality. I have also received examples of this species from Mr. T. Ayres, who took them near Potchefstroom, South African Republic. The latter are smaller and much more strongly banded on the undersurface than the specimens from Klipdrift. Mr. Hewitson's figure appears to have been made from a much-worn individual.

oblique, apical streak is formed by the confluence of the first spots of the two rows; cellular region and costa adjacent suffused with fulvous-yellow from base; between median nervure and inner margin an irregular, elongate, fuscous marking. *Hindwing:* spots arranged similarly to those in forewing, but more suffused and indistinct, especially in basal region and beyond middle towards lower part of hind margin, where there is a clouding of brownish-fuscous; anal-angular fulvous-ochreous spot smaller than on upperside, and edged inferiorly with black.

This curious little species appears to constitute a passage between the genera *Aphnæus* and *Zeritis;* the upperside of the wings, with a blue gloss and fulvous anal-angular spot (but without the usual yellow-ochreous markings), resembling that prevalent in the former genus, while the metallic-centred spots of the underside are so similar in arrangement and appearance to the characteristic spotting of *Zeritis* (and particularly to that of the little *Z. Phosphor*, mihi) that, until I detected the remains of a second tail on each hindwing, I was strongly disposed to place the butterfly in the latter genus.

I am indebted to Miss Fanny Bowker, of Pembroke, near King William's Town, for the only specimen that I have seen; it was taken by her on a low shrub (a species of *Euclea*), on the border of a wood at Tharfield, in the Division of Bathurst. About the same bush were several *Zeritis Chrysaor*, Trimen; and Mrs. Barber informs me that *Ebenaceæ* of the genus *Euclea* are the plants most frequented by the species of *Zeritis* in the Eastern Districts of the Colony.

Hab.—Bathurst, Cape Colony. In the collection of R. Trimen.

Genus Zeritis, Boisd.

Zeritis Argyraspis, n. sp. (Pl. I. figs. 7, 8.)

Exp. (♂) 1 in. 4 lin.; (♀) 1 in. 8 lin.—1 in. 9 lin.

♂. *Orange-fulvous, with rather wide fuscous bordering; cilia wide, fuscous, conspicuously varied with pure white* between extremities of nervules. *Forewing:* fuscous border very broad in apical region, occupying outer half of costa, and emitting a short ray towards base along sub-costal nervure; on 3rd median nervule the border abruptly narrows, thence forming a rather wide and tolerably even band to anal angle; base slightly clouded with fuscous. *Hindwing:*

border similarly developed in apical region, but abruptly constricted a little above 3rd median nervule, and thence to anal angle being very much narrower than the corresponding portion in forewing; base faintly tinged with fuscous-grey, inner margin clouded with an ill-defined fuscous bordering beyond middle. UNDERSIDE.—*Hindwing, and bordering of forewing, fuscous-ochreous, with bright-silvery, narrowly black-edged spots. Forewing:* on costa, at base, a longitudinal silvery streak; 2 small, rounded, silvery-white spots in discoidal cell near base, and an elongate similar spot at extremity of cell; 9 spots in apical region, viz.:—2 minute ones close to costa; 1 small rounded one a little beyond end of cell; 2 larger ones placed so as to form an oblique elongate marking between small rounded spot and apex, and 4 in a row from apex along hind-margin as far as 3rd median nervule, the lowest spot the largest; orange-fulvous replaced by a broad creamy band along inner margin; inner portion of hind-marginal border below apical region marked with a row of 3 good-sized blackish spots. *Hindwing:* on basal lobe of costa a rather large subovate spot; beyond it, below costal nervure, 2 similar spots placed longitudinally; a small spot in discoidal cell close to base, followed by a dot; a very irregular, roughly V-shaped marking at extremity of cell; between this marking and inner margin are a similar but more elongate marking, and a rather small sub-ovate spot; beyond middle a very irregular transverse row of 8 spots of various sizes and shapes, of which the 2nd and 4th (of about equal size) are much larger than the rest; a hind-marginal row of 9 spots, of which the 3 last form an oblique line to inner margin beyond middle; at anal angle a small, short, oblique, red mark, bordered on each side with white; quite at base, below origin of sub-median nervure, a small round spot like the rest.

Forewings with hind-marginal outline strongly elbowed about extremity of radial nervures: *hindwings* with a slight anal-angular lobe, and two tails of moderate length, broad at the base and tapering gradually to a point at extremities of 1st median nervule and sub-median nervure respectively.

♀. Similar to ♂, *but fuscous bordering relatively not so broad,* and scarcely any tinge of fuscous at bases. *Forewing:* bordering in apical region not so greatly wider than its other portion, and emitting no ray along sub-costal nervure, but only 2 lines from costal edge on 2nd and 3rd sub-costal nervules; near anal angle the bordering is wider

than about middle of hind margin. Underside.—Rather paler in ground-colour, but otherwise quite as in ♂.

In outline the wings of the ♀ are more even and blunted, the *forewings* being less elbowed below apex, but with a slight prominence at end of 1st median nervule.

A streak margining the front of each eye; another at lateral base of each palpus, and 6 spots on each side of abdomen (the latter edged with black) silvery-white. General colouring of body fuscous-ochreous, with two longitudinal whitish stripes on each side of breast; legs ochreous, with whitish femora.

A ♂ example from Murraysburgh differs from other specimens in the great breadth of the fuscous bordering, particularly in the forewings.

There is a series of variations which leads from *Z. Malagrida*, Wlgrn., in the direction of *Z. Argyraspis*, but the latter, which is the largest and finest form I have seen, appears to be the only one sufficiently well-marked in both sexes to admit of separation as a species. From the type *Z. Malagrida* (to which M. Wallengren, who has seen specimens which I have forwarded to him, informs me must be referred the "var. *Aglaspis*" of *Rhop. Afr. Austr.*, ii. p. 272), *Z. Argyraspis* seems to be constantly distinguished by *the very broad field of orange-fulvous, which extends to the costal edge of forewings* on the upper-side, and by the much brighter, more clearly defined, and rounder silvery spots of the underside. As regards the latter, it is very noticeable that *the spots of the hind-marginal row in the hindwings are not saggitate*, and that *those of the row beyond the middle are far more irregularly placed* than in *Malagrida*, and present no approach to the continuity which almost forms a stripe in that species. In addition to these distinctions should be mentioned the much larger size of *Argyraspis*, and the different outline of the wings, which latter consists in a marked prominence of the apical region of the forewings, and the production of the slight prominences in the hindwings of *Malagrida* at the ends of the sub-median nervure and 1st median nervule into distinct pointed tails.

Dr. Kannemeyer was the first to communicate to me this striking form, in the shape of a ♀ taken near Burghersdorp, in the Albert Division of the Cape Colony. Mr. Mushett, in 1864 and in 1870, sent me examples of both sexes from Murraysburg. Mr. E. L. Layard showed me a specimen taken by him near Beaufort (West), which

is now in the collection of the South African Museum. Early in 1871, Mr. J. H. Bowker sent me a very fine ♂, taken "on the way from Murraysburg to Somerset East."

Hab.—Beaufort, Burghersdorp, and Murraysburg, Cape Colony. In the collections of the South African Museum and R. Trimen.

Genus Liptena, Hewits.

Liptena Aslanga, n. sp.

Exp. 1 in. 1½ lin.

♂ ? *Pale orange-ochreous; forewings with blackish bordering. Forewing:* border rather wide from base along costa, abruptly interrupted on costal edge beyond middle, but thence forming a broad apical border which rapidly narrows along hind margin to a point at anal angle; border marked on costal edge by 4 sub-quadrate spots of the ground-colour, and emitting, at the point of abrupt interruption, a broad ray downward as far as 3rd median nervule; before this ray, and united to the border, a narrow blackish marking defines extremity of discoidal cell. *Hindwing:* spotless; a narrow, ill-defined, reddish-fuscous, hind-marginal edging. Cilia fuscous, with paler interruptions (more visible in *forewing*). Underside.—*Hindwing and markings of forewing shining leaden grey, varied with reddish-ochreous spots. Forewing:* ground colour towards inner margin paler than on upperside, but darker near costa and hind margin; markings similar in position to those of upperside; mark at extremity of cell broader, and preceded by two similar cellular marks; ray from costal border before middle prolonged, with an inward curve, to 2nd median nervule, and, by a small, almost detached projection at its extremity, to 1st median nervule; cellular grey marks indistinctly prolonged below median nervure; costal spots of the ground colour distinct; apical grey border intersected by 2 macular streaks of the ground colour from costal edge, joining the ground colour at their lower extremity; the outer of these rows is the longer, composed of more lunulate spots, and situated immediately before the hind-marginal narrow grey edging. *Hindwing:* reddish-ochreous spots arranged in five transverse rows at about equal distances apart, viz.: the 1st, near base, of 5 minute elongated spots; the 2nd, before middle, of 5 or 6 linear, more or less united spots; the 3rd, about middle, con-

spicuous, very irregular, of 8 elongate spots touching each other and edged with blackish (which is suffused exteriorly); the 4th and 5th each of 7 separated sagittiform spots, the outermost row corresponding with that on hind margin of forewing; a spot at extremity of cell. Antennæ ringed alternately with black and white.

This very singular little butterfly has no very near ally that is known to me. *Liptena Libentina*, Hewitson (*Exot. Butt.* iii. pl. 60, ff. 8, 9), a native of old Calabar, appears to be the most closely related of its congeners, but is very much larger, and has a very different underside pattern and colouring, the apex of the forewings being grey, with a broad yellow bar, and the hindwings being red, with a few black spots, and a grey hind-marginal border.

The only specimen of *L. Aslanga* that I have seen was sent to me by Mr. W. Morant at the end of 1869, with a note that it was taken near Pinetown by a resident there. Mr. Morant at the same time wrote that he had himself captured an example, on 19th May, 1869, in his garden at that place, and that it flew far higher and more strongly than *Pentila tropicalis*.

Hab.—Pinetown, near D'Urban, Port Natal. In the collection of W. Morant.

Family HESPERIDÆ, Leach.

Genus Pyrgus, Hübn.

Pyrgus Chaca, n. sp. (Pl. I. figs. 9, 10.)

Exp. (♂) 1 in. 3½ lin.; (♀) 1 in. 5⅓ lin,

♂ *Fuscous, with white and ochreous spots. Forewing:* irrorated thinly in parts with some yellowish scales; a broad, sub-reniform, white spot at extremity of discoidal cell; a very irregular row of 8 white spots, of which the first 3 are contiguous, and form a short, rather wide, costal and sub-apical stripe, the 4th and 5th are nearest hind margin and minute, the 7th largest and just under disco-cellular spot, and the 8th indistinct and just above sub-median nervure; a hind-marginal row of 7 indistinct small ochreous spots, of which the lowest is suffused and almost obsolete. *Hindwing:* some hoary hairs along line of median and sub-median nervures; an indistinct, good-sized, ochreous spot at extremity of discoidal cell; vague traces of 3 or 4 small ochreous spots near upper half of hind margin. Cilia white, varied with black at ends of ner-

vures. UNDERSIDE.—*Hindwing and costal and apical region of forewing mingled creamy and fulvous-ochreous*, the fulvous predominating in hindwing. *Forewing:* white spots as above, but rather larger, and relieved by black edgings from the ochreous colouring round them; a small black spot on costa close to base; a row of 7 small black spots on hind margin from apex to anal angle, the lowest two suffused and enlarged, so as to join inner-marginal, blackish ground colour. *Hindwing:* between costal and sub-median nervures, two transverse white bands (one before, the other beyond middle) edged on both sides with macular black streaks; a hind-marginal row of 6 small black spots; space between sub-median nervure and inner-marginal edge blackish, irrorated interiorly with creamy-ochreous; costa at base with a black curved mark, about and beyond middle bordered with grey.

♀ *Not so dark as* ♂; spotting similar, but *all the yellow-ochreous spots larger and more distinct;* cilia creamy instead of white, more broadly varied with black. UNDERSIDE.—As in ♂, but the fulvous brighter, especially in hindwing.

This is a species so closely allied to *P. Mohozutza*, Wallgr., that in 1865, on receiving a single ♀ from Mr. J. H. Bowker, I inclined to the belief that it was only an unusually large example of that insect. But an inspection of both sexes, kindly presented to me by Mrs. Barber and Mr. Schiffman in 1868, has convinced me of the distinctness of *P. Chaca*. Apart from the very considerable difference in size (*P. Mahozutza* not exceeding about 13 lines), both sexes of *P. Chaca* may, as regards the markings of the upperside, be recognized by the possession of two small additional white spots (the 4th and 5th) in the transverse row beyond the middle of the forewings, and the duller and proportionally much smaller ochreous spots of the hind-marginal row in the forewings of both sexes and in the hindwings of the ♀. On the upperside of the hindwings of the ♂ *Chaca* there are, however, an indistinct central spot, and traces of 3 hind-marginal spots not found in the ♂ *Mahozutza*. The underside in both sexes differs from that of *Mahozutza* by being paler; by having a row of distinct black spots, instead of a black streak, along the hind-marginal edge of the wings; and by presenting a whitish transverse band before the middle in the hindwings.

Mr. Bowker took this butterfly in several localities near

the Tsomo River, Kaffraria, in December, and notes it as occurring in "open grassy glades between forests upon high mountains, sitting on flowers with closed wings." Mrs. Barber, however, who met with the species near Bathurst in March, 1870, writes, that it frequented "long grass, in rather a low and damp locality, among trees." Mr. Schiffman's specimens were captured on one of the hills round Grahamstown, but I am not aware in what kind of station.

Hab.—Grahamstown and Bathurst, Cape Colony; Tsomo River, Kaffraria. In the collections of the South African Museum and R. Trimen.

Genus Cylopides, Hübn.

Cyclopides Barberæ, n. sp. (Pl. I. fig. 11.)

Exp. 1 in. 5 lin.

♀ (?) *Glossy brownish-fuscous, with an ochreous tinge, spotted with white. Forewing:* a reniform spot on extremity of discoidal cell; beyond middle a very irregular row of 8 spots, of which the first 3 touch each other, and form a short costal and sub-apical stripe, the 4th and 5th (nearest hind margin) are small and indistinct, and the 7th (immediately below disco-cellular spot) the largest. *Hindwing:* an indistinct yellowish-white spot marks extremity of discoidal cell. Cilia varied with fuscous and white. Underside.—*Hindwing and costal and apical border of forewing hoary-grey, varied with brownish. Forewing:* a small whitish spot immediately above disco-cellular spot; 5 minute white marks on costal edge, of which the 4th adjoins first 3 spots of transverse row; 4th and 5th spots of transverse row merged in *an oblique apical marking of hoary-grey. Hindwing:* an elongate white mark in discoidal cell before middle is scarcely separated from *a large irregular white marking occupying extremity of cell*, and extending to a hoary-grey hind-marginal suffusion; this marking is joined, at its upper portion, by *an oblique white stripe from costa about middle*; between median and submedian nervures *an ill-defined longitudinal white stripe*, extending from near base to join hind-marginal, hoary-grey near anal angle.

The palpi and abdomen are wanting in the single specimen from which the above description has been made. From the form of the wings I am disposed to think it a ♀ example.

This species is at once distinguished from all its congeners in South Africa by the remarkable disposition of the white markings of its underside, which indeed are unlike those presented by any member of the *Hesperidæ* that I can call to mind.

I have named this curious butterfly in honour of my friend Mrs. Barber, of Highlands, near Grahamstown, whose kind and valuable aid in working out the Rhopalocerous fauna I have had such frequent occasion to acknowledge in previous papers. The single specimen described was taken by Mrs. Barber in October, 1871, "among long grass and rushes near water" in the Stormbergen, a range of mountains forming the boundary between the Queenstown and Albert Divisions.

Hab.—Stormbergen, Cape Colony. In the collection of R. Trimen.

Cyclopides Meninx, n. sp. (Pl. I. fig. 12.)

Exp. $10\frac{1}{3}$ lin.

♂ *Dull brown, without markings.* UNDERSIDE.—*Forewing: on hind-marginal edge a row of* 4 *small, triangular, inter-nervular, yellow spots* between apex and 3rd median nervule, diminishing in size from the apical spot. *Hindwing:* a row of 6 similar, larger spots on hind-marginal edge, the 1st (at apex) linear, the last just above sub-median nervure; *two broad, white, longitudinal stripes*, one commencing abruptly in discoidal cell near extremity, and joining 3rd spot on hind margin; the other running from base between median and sub-median nervures, and ending suffusedly before 6th spot; a narrow white edging to inner margin.

This species is allied to *C. Menes*, Cramer (*Pap. Exot.* t. cccxciii. ff. H. 1), but is at once recognized by its want of the conspicuous apical yellow streaks on upperside of the forewings, and by its possession of two white stripes on underside of the hindwings.* *Menes* is a native of Tropical South America, though Cramer gives for it the

* Stoll's figure of *C. Menes* (*Suppl. Cram.*, t. vii., f. 6 G) represents the subcostal nervure of forewings coloured ochreous-yellow from the base almost to the middle. This character is also prominent in *C.* (*Ancyloxypha*) *graeilis*, Felder, from New Granada, which may be identical with Stoll's insect, though the underside of its hindwings is conspicuously clouded with ochrey-whitish. *Vide* "Reise der Novara," Lep. iii., p. 520, t. lxxiv., f. 28.

localities, "Cap de Bonne Espérance et sur la Côte de Coromandel."

The only specimen that I have seen was taken by Mr. Walter Morant, at Mooi River, near Potchefstroom. He notes the insect as being weak in flight, and haunting marshy ground, occurring at the beginning of December.

Hab.—Potchefstroom, Transvaal Republic. In the collection of R. Trimen.

Genus Pamphila, Fab.

Pamphila Morantii, n. sp.

Exp. 1 in. 4 lin.

♀ *Very dark purplish-brown, with fulvous-yellow bars and spots. Forewing*: a rounded spot marking end of discoidal cell; a larger, sub-ovate spot nearer costa, between last-named spot and apex; below the larger spot, on 3rd median nervure, commences a very oblique, rather wide bar, with irregularly-dentate edges, extending as far as sub-median nervure about middle, and thence emitting a narrow yellow line along sub-median towards base; basal half of costa broadly clouded with ferruginous-ochreous, which tinges the disco-cellular spot and the larger spot. *Hindwing*: a rather large, obliquely-transverse, elongate marking about the centre, extending over median nervules near their origin, broadest in its upper portion. Cilia very broad, of the same yellow as markings generally, but in forewings tinged with ferruginous-ochreous from apex to about extremity of 1st median nervule. Underside.—*Hindwing* (*except fulvous-yellow space of inner marginal fold*), *and costal border and apical region of forewing, ferruginous-ochreous. Forewing*: inner-marginal region fuscous; sub-apical spot not visible; cellular spot and oblique bar paler than on upperside, the upper part of both tinged with the ferruginous-ochreous of apical region; along hind-marginal edge a very thin pale-yellowish line, widening a little at anal angle. *Hindwing*: 3 small black spots in basal region, viz. 1 in discoidal cell close to base, another at extremity of cell, and the third between median and sub-median nervures; 5 similar spots form a strongly-curved discal row, between costal and sub-median nervures, but interrupted on radial—2 spots being above the interruption, and 3 below it; a thin hind-marginal yellow edging (as in forewing) joining the very broad termination of the fulvous-yellow of inner-marginal fold between 1st median

nervule and sub-median nervure; inner margin rather narrowly edged with ferruginous-ochreous. Cilia in each wing of the same colours as the several adjacent portions of the hind margin.

Above, the head, palpi, patagia and pterygodes ferruginous-ochreous; back of thorax and of abdomen dark purplish-brown, the former having posteriorly some yellow hairs, and the latter the segmental incisions, and a terminal tuft, fulvous-yellow. *Beneath*, the palpi, breast and legs (with abdomen near base) yellow, tinged with ferruginous-ochreous; median line and terminal portion of abdomen pale yellow, a lateral (and inferior) row of small black spots being on each side of median line. Antennæ black throughout; the clubs not recurved at tip, but slightly bent outwards.

Near *P. Herilus*, Hpfr.,* but easily recognized by the fewer and differently situated black spots of the underside of the hindwings; and further differing from that species in the ferruginous colouring of the underside, and in wanting the yellow cellular spot and conspicuous longitudinal sub-inner-marginal stripe on upperside of hindwings. *Morantii* is besides much larger than *Herilus*. A species from Celebes, *P. flavescens*, Felder,† presents almost the same spotting as *Morantii* on the underside of the hindwings, but has the spot nearest base above the sub-costal nervure, and possesses an additional spot just beyond that spot.

I have named this species after Mr. Walter Morant, who has been a most successful collector and careful observer of South African Lepidoptera. Mr. Morant informs me that the single specimen from which the above description is made was taken sitting on a shrub at the edge of a small wood, on the 30th June, 1869.

Hab.—Pinetown, near D'Urban, Natal. In the collection of W. Morant.

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* Peters' *Reise nach Mossambique*, t. xxvii., f. 7, 8; p. 419.

† *Reise der Novara, Lep.* iii., t. lxxii., f. 9.

*Explanation of Plate I.**

Fig. 1. *Leptoneura Dingana*, Trimen (Malang Spruit, Natal).

„ 2. *Erebia irrorata*, Trimen, ♀ (Zwaarte Ruggens, Uitenhage Division, Cape Colony).

„ 3. *Mycalesis perspicua*, Trimen, ♂ (Pinetown, Natal).

Figs. 4, 5. *Aphnæus Phanes*, Trimen, ♂ and ♀ (Klipdrift, Vaal River, Griqualand West.).

Fig. 6. *Aphnæus pseudo-zeritis*, Trimen, ♂ (Tharfield, Bathurst Division, Cape Colony).

Figs. 7, 8. *Zeritis Argyraspis*, Trimen, ♂ and ♀ (♂, "Between Somerset East and Murraysburg;" ♀ Murraysburg; Cape Colony).

„ 9, 10. *Pyrgus Chaca*, Trimen, ♂ and ♀ (Grahamstown, Cape Colony).

Fig. 11. *Cyclopides Barbcræ*, Trimen, ? ♀ (Stormbergen, Cape Colony).

Fig. 12. *Cyclopides Meninx*, Trimen, ♂ (Potchefstroom, South African Republic).

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* The locality of each specimen figured immediately follows its name and sex.

VI. *On the* Hydroptilidæ, *a Family of the* Trichoptera.

By the Rev. A. E. Eaton, M.A.

[Read 3rd February, 1873.]

Trichoptera in general, but more especially the *Hydroptilidæ*, are an annoyance to the Lepidopterist. If he lives near a river they are a constant source of disappointment to him whenever, on a summer evening, he inspects the entomological miscellany which accumulates upon his table-cloth beneath the gaslight. Down falls a scorched and crippled "Micro—"; he has the trouble of looking at it; but his first glance detects the scabrous clothing of the anterior wings of a Micro-Trichopteron, whose hair looks as if it had been brushed the wrong way, in lieu of the scales of a Micro-Lepidopteron; and his only consolation is that *he* may leave the pinning of *that* kind of things to the Trichopterists.

A great similarity of ornamentation prevails amongst congeneric species of the *Hydroptilidæ;* and the density of their hair prevents structures of dried specimens from being made out with certainty, besides concealing the neuration of the wings completely. Consequently most entomologists have been deterred from the study of this family of insects, and little is known about them. Up to the present time only two genera have been defined, and fourteen or fifteen species. Of these one species is fossil, seven or eight are European, and the rest are from Madeira, North America, Ceylon and New Zealand. In addition to these I have been able to determine four genera and six species, of which species five are British.

Mr. M'Lachlan most kindly sent all of his specimens of *Hydroptilidæ* to me, with permission to subject them to most ruthless treatment. This has enabled me to effect some reductions in synonymy, and to verify some points in their geographical distribution. I have also examined Stephens' and Wollaston's collections in the British Museum.

The synonymy of species collated from foreign authors may be taken at what it may be worth. Without inspection of type-specimens it is impossible to arrive at decisions absolutely trustworthy respecting the species to which descriptions were intended to apply. All other identifications (since no figures of appendices have been published hitherto) are mere tentative conjectures more or less probable. Still, where they cannot be disproved, there is no reason why they should not be accepted. However, it is well not to attach much importance to them. At the least they may be regarded as indications of the occurrence abroad of species very nearly related to our native forms. Some of the British species have a wide range, being found even in Italy. It is possible, therefore, that Pictet's and Kolenati's species really occur in Great Britain. And, therefore, though unable to affirm this to be the case, I admit the identifications which have been set forth by previous workers in hope that they may be verified; but I do not give localities for species (without my having seen specimens from them) on the strength of these provisional identifications.

In Dr. Hagen's "Phryganidarum Synopsis Synonymica" a complete index to the literature published before the year 1864 relating to the family already exists. Up to that date I shall therefore give merely an enumeration of the authors with references to figures only. The places of descriptions may be ascertained from the subjoined list of publications. Since 1864, very little has been published about the *Hydroptilidæ*, and, in consequence, few additions require to be made to Dr. Hagen's index; such as there are I give in detail. There are some changes in the synonymy which I have adopted from Mr. M'Lachlan's "Monograph of the British Trichoptera;" for others I am myself responsible.

In the following list of publications the names originated by authors are given after the titles of the works in which they were first published:—

A Chronological List of Publications relating to the Hydroptilidæ.

1819 (Dalm. Vet. Acad. Handl.) J. W. Dalman: in K. Vetenskaps Academiens Handlingar, i. 125—7, tab. vi. 1—4. *Hydroptila tineoides.*

1823 (Dalm. An. Ent.) J. W. Dalman: Analecta Entomologica, pp. 26-7, tab. iii. 1—4. [Reprinted from his previous paper, with a few verbal alterations.]

1825 (Lat. Fam. Nat.) P. A. Latreille: Familles Naturelles du Règne Animal, p. 439.

1834 (Curt. Phil. Mag.) J. Curtis: Descriptions of some nondescript British Species of May-flies of Anglers: in Lond. and Edinb. Philos. Mag. ser. 3, pp. 217-8. *Agraylea sexmaculata, multipunctata. Hydropt. sparsa, veetis, costalis.*

1834 (Pict. Rech.) F. J. Pictet: Recherches pour servir à l'Histoire et à l'Anatomie des Phryganides, pp. 224—6, tab. i. 8 and xx. 10—13. *Hydropt. pulchricornis, flavicornis, brunneicornis.*

1836 (Steph. Ill.) J. F. Stephens: Illustrations of British Entomology, Mandibulata, vi. 151—4. *Hydroptilidæ.*

1839 (Burm. Handb.) H. C. C. Burmeister: Handbuch der Entomologie, Bd. ii. Abth. ii. pp. 905-6. *Hydropt. tineodes* for *tineoides.*

1840 (Westw. Intr.) J. O. Westwood: Introduction to the Modern Classification of Insects, ii. 61, fig. 67, 11; Gen. Synop. p. 51. *Hydroptilides.*

1840 (Zet.) J. W. Zetterstedt: Insecta Lapponica, col. 1073-4. *Hydropt. pumilio, ambigua.*

1842 (Ramb.) J. P. Rambur: Histoire Naturelle des Insectes Névroptères, p. 499. [An abstract of Dalman's descriptions, not an exact translation.]

1845 (Schn.) W. G. Schneider: Verzeichniss der Von Herrn Zeller im Jahre 1844 in Sicicilen und Italien gesammelten Neuropteren, &c.: in Stett. Ent. Zeit. vi. 346. *Hydropt. fuscicornis.*

1848 (Kol. Gen. et Sp. Trichopt. I.) F. A. Kolenati; Genera et Species Trichopterorum; pars prior, Heteropalpoideæ. Separate: ex Act. Reg. Bohem. Soc. Scient. pp. 22-3, 25-6, 34-5, 103—6; pl. iii. 28, a—d, —29. *Hydrorchestria argyricola. Hydropt. obscura.*

1848 (Blanch.) E. Blanchard: in Cuvier's Règ. Anim. ed. by Masson, Insectes, i. 112, tab. 106, bis f. 5.

1852 (Walk. Cat.) F. Walker: Catalogue of the Specimens of Neuropterous Insects in the Collection of the British Museum, Part I. pp. 131—5. *Hydropt. tenebrosa,* (?) *parva, Agraules.*

1854 (Hag.) H. A. Hagen: Ueber die Neuropteren der Bernstein Fauna: in Verh. Zool.-bot. Ver. Wien, iv. 107. *Hydrorch. succinica.*

1857 (Brau. Neur. Aust.) F. Brauer: Insecta Austriaca, Neuroptera, pp. 38-9.

1858 (Hag.) H. A. Hagen: Russlands Neuropteren: in Stett. Ent. Zeit. xix. 120.

1859 (Hag. Brit. Syn.) H. A. Hagen: Synopsis of the British Phryganidæ: in Entomologist's Annual, pp. 106—8. *A. sexpunctata* for *sexmaculata,* amongst synonyms at p. 106.

1859 (Hag. Syn. Ceyl.) H. A. Hagen: Synopsis der Neuroptera Ceylons: in Verh. Zool.-bot. Gesells. Wien, ix. 209. *Hydropt. cursitans.*

1859 (Kolen. Gen. & Sp. Trichopt. II.) F. A. Kolenati: Genera et Species Trichopterorum, pars altera, Æquipalpidæ: in Nov. Mem. Soc. Imp. Moscow, xi. pp. 160, 163, 181-2.

1860 (Mül. Terminol. Ent.) J. Müller: Terminologia Entomologica, fig. 483. [Reduced from Kolenati.]

1861 (Hag. Am. Syn.) H. A. Hagen: Synopsis of the Neuroptera of N. America: in Smithsonian Miscellaneous Collections, iv. 274-5. *Hydropt. albicornis, tarsalis.*

1862 (M'Lach.) R. M'Lachlan: Characters of new Species of Exotic Trichoptera: in Trans. Ent. Soc. Lond. ser. 3, i. 304. *Hydropt. albiceps.*

1863 (M'Lach.) R. M'Lachlan: Notes on North American Phryganidæ: in Entomologist's Annual, p. 158.

1864 (Hag.) H. A. Hagen: Phryganidarum Synopsis Synonymica: in Verh. Zool.-bot. Gesells. Wien, vol. xiv. 802, 824—6. Separate, pp. 4 and 26—8. [Under *Agraylea, Hydroptila* and *Hydrorchestria.*]

1865 (Hag.) H. A. Hagen: The Neuroptera of Madeira: in Entomologist's Monthly Magazine, ii. 77. *Hydropt. atra.*

1865 (M'Lach.) R. M'Lachlan: Trichoptera Britannica: in Trans. Ent. Soc. Lond. ser. 3, vol. v. 90—6, pl. i. 5; ii. 4, 31; v. 6, 7. *Hydropt. angustella.*

1865 (Hag.) H. A. Hagen: Die Phryganiden Maderas: in Stett. Ent. Zeit. xxvi. 219. *Hydrorch. insularis.*

In the present paper are described the following new genera and species:—*Phrixocoma forcipata, occulta, femoralis; Ithytrichia lamellaris; Orthotrichia; Oxyethira;* (*Agraylea*) *pallicornis.* The genus *Hydroptila* of Dalman is also re-established in its original and exclusive form. My types are (in fluid) in the British Museum and (pinned) in Mr. M'Lachlan's collection.

A Synonymic List of the Genera and Species of the Hydroptilidæ.

Agraules, Agassiz, 1846; [Kolen. 1848]; Walk. 1852 = *Agraylea.*

multipunctata, Walk. 1852 = *Agraylea multipunctata.*

sexmaculata, ditto, ditto.

Agraylea, Curt. 1834; Steph. 1836; Westw. 1840; Hag. 1858, 1859; M'Lach. 1865: type *A. multipunctata.*

insularis, Hag.; in *Hydrorchestria*, Hag.

multipunctata, Curt. 1834; Ste. 1836; Hag. 1859; ! M'Lach. 1865, Trans. Ent. Soc. Lond. ser. 3, vol. v. 92, pl. v. 6 [neuration].

pallicornis! nov. sp.

pumilio, Zet.; in *Hydroptila*, Zet.; Hag. 1864;—incertæ sedis.

sexmaculata, Curt. 1834; Steph. 1836; Hag. 1858 = *multipunctata.*

succinica, Hag.; in *Hydrorchestria*, Hag.

Hydroptila, Dalm. 1819, 1823; Lat. 1825; Ramb. 1842: type *H. tineoides.*

‡ *Hydroptila*, Curt. 1834; Pict. 1834; Steph. 1836; Burm. 1839; Westw. 1840; Zet. 1840; Schn. 1845; Kolen. 1848, 1859; Walk. 1852; Brau. 1857; Hag. 1858, 1859, 1861, 1864, 1865; Müll. 1860; M'Lach. 1862, 1863, 1865 = *Phrixocoma, Oxyethira, Orthotrichia,* &c.

albiceps! M'Lach. 1862 = *Oxyethira albiceps.*

albicornis, Hag. 1861 = *Phrixocoma albicornis.*

ambigua, Zet. 1840; Walk. 1852:—probably Lepidopterous, "alæ . . . squamis."

angustella ! M'Lach. 1865, Trans. Ent. Soc. Lond. ser. 3, vol. v. 95, pl. i. 5 = *Orthotrichia angustella.*

[*argyricola*, Dalm. MS. = *Agraylea multipunctata.*]

atra ! Hag. 1865, Ent. Mo. Mag. ii. 77 = *Orthotrichia atra.*

brunneicornis, Pict. 1834, tab. i. 8 and xx. 12; Kol. 1848, 1859; Walk. 1852 = *Ithytrichia lamellaris ?* spurs 0, 3, 4.

‡ *brunneicornis !* Steph. 1836 = *Phrixocoma sparsa.*

[*calocera*, Dalm. MS. = *Phrixocoma sparsa.*]

costalis, Curt. 1834; Steph. 1836; Walk. 1852; Hag. 1859; ! M'Lach. 1865, Trans. Ent. Soc. Lond. ser. 3, vol. v. 96 = *Oxyethira costalis.*

‡ *costalis*, Kol. 1859 = *Phrixocoma fuscicornis.*

cursitans, Hag. 1859:—incertæ sedis.

flavicornis, Pict. 1834, tab. xx. 11 = ? *Oxyethira costalis.* Spurs 0, 3, 4.

fuscicornis ! Schn. 1845; Walk. 1852 = ? *Phrixocoma fuscicornis.*

[*hirsutula*, Kollar, MS. = *Phrixocoma sparsa.*]

[*lanceolata*, Snndev. MS. Zet. 1840; Walk. 1852: not described.]

[*longula*, Dalm. MS. = *Agraylea multipunctata* ♀.]

obscura, Kol. 1848 = *Phrixocoma fuscicornis.*

parva ! Walk. 1852 = *Psychomyia parva.*

pulchricornis, Pict. 1834, tab. xx. 10; Kol. 1848, tab. iii. 29; Blanch. 1848, tab. 106 bis f. 5; Walk. 1852; Hag. 1858, 1859 = *Phrixocoma.*

pumilio, Zet. 1840; Walk. 1852:—incertæ sedis. Hagen refers it to *Agraylea.*

[*recurva*, Dalm. MS. = *Phrixocoma sparsa.*]

sparsa, Curt. 1834; ! Steph. 1836; Walk. 1852; Kol. 1859 = *Phrixocoma sparsa.*

tarsalis, Hag. 1861:—incertæ sedis. Spurs 0, 3, 4.

tenebrosa ! Walk. 1852; Hag. 1861; M'Lach. 1863, a genus of *Rhyacophilidæ* (not *Agapetus*).

tineodes, Burm. 1839; Brau. 1857 = *Phrixocoma sparsa.*

tineoides, Dalm. 1819, tab. vi. 1—4 and 1823, tab. iii. 1—4; Ramb. 1842.

‡ *tineoides !* Steph. 1836 = *Oxyethira costalis.*

‡ *tineoides*, Zet. (?) 1840; Kol. 1848, 1859; Walk. 1852; Hag. 1858, 1859; ! M'Lach. 1865, Trans. Ent. Soc. Lond. ser. 3, vol. v. 94, pl. v. 5 (neuration) = *Phrixocoma sparsa.*

Vectis, Curt. 1834; Steph. 1836; Walk. 1852; Hag. 1859 = præc.

Hydroptilidæ, Steph. 1836; Burm. 1839; Walk. 1852; Brau. 1857; Kolen. 1859; Hag. 1865; M'Lach. 1865.

Hydroptilides, Westw. 1840; Ramb. 1842; Hag. 1859 = præc.

Hydroptiloidæ, Agassiz, Nomencl. 1846: idem.

Hydrorchestria, Kolen. 1848 = *Agraylea.*

argyricola, Kol. 1848 = *A. multipunctata.*

insularis, Hag. 1865, Stett. Ent. Zeit. xxvi. 219 = *A. insularis.*

multipunctata, Kol. 1859 = *A. multipunctata.*

sexmaculata, Kol. 1848, tab. iii. 28, wing, palpus, 1859 = præc.

succinica, Hag. 1854 = *A. succinica*.
Ithytrichia, nov. gen.: type *I. lamellaris*.
lamellaris, nov. sp.
Orthotrichia, nov. gen.: type *O. angustella*.
angustella! M'Lach.: in *Hydroptila*, M'Lach.
atra! Hag.: in *Hydroptila*, Hag.
Oxyethira, nov. gen.: type *O. costalis*.
albiceps, M'Lach.: in *Hydroptila*, M'Lach.
costalis, Curt.: in *Hydroptila*, Curt.
Phrixocoma, nov. gen.: type *P. sparsa*.
albicornis, Hag.: in *Hydroptila*, Hag.
femoralis, nov. sp.
forcipata, nov. sp.
? *fuscicornis!* Schn.: in *Hydroptila*, Schn.
occulta, nov. sp.
pulchricornis, Pict.: in *Hydroptila*, Pict., ! Hag.
sparsa, Curt.: in *Hydroptila*, Curt.

Family HYDROPTILIDÆ.

Antennæ shorter than the wings, much shorter in the female than in the male; their basal joints not much stouter than the others. Ocelli present or absent. Maxillary palpi alike in both sexes, slender, sparsely hairy, five-jointed, but often apparently four-jointed owing to the obsolescence of the first joint. Labial palpi with the terminal joint enlarged. Tubercles of head and thorax with long coarse stiff hairs. Wings narrow, with very long fringes; the anterior with numerous erect or ascending hairs on the disk, and sometimes with an appendage near the base of the post-costa; the posterior with adpressed hairs on the disk, and without a fold. Legs slender, not very long; the posterior tibiæ more or less sétose, sometimes pinnately hairy; the anterior tibiæ spurless, or with one spur; the intermediate with two or three, and the posterior with four spurs. Abdomen short: in the male there is usually a horny process from the ventral antepenultimate segment, the penis is long, and during life retracted; in the female the antepenultimate segment beneath has sometimes an indistinct prominence, the ovipositor during life is retracted and is furnished with two tentacles at the apex. I have not detected any sexual differences in the palpi, the neuration of the wings, or the tibial spurs.

The species with which I am acquainted appear to shun excessive heat. Prominent objects by the waterside, such

as tall plants and shrubs, palings and walls, present great attractions to them, and so does light. They retire to rest mostly amongst the grass and herbs, though crevices in bark and the uneven surface of shaded walls are frequent resorts of theirs during repose. Their vivacity is remarkable. As soon as they alight upon the ground they rush along helter-skelter with unusual impetuosity, flying off for a short flight from time to time whilst in full career, or coming to a dead stop to rest awhile with antennæ ascending and slightly separated (as suddenly as *Stenopsocus immaculatus* is in the habit of halting), and then starting off hurry-skurry once more. In deep repose some genera place their antennæ in a different posture to that which they assume in these short pauses. The species inhabit rivers and lakes. Their localities are sometimes confined to the neighbourhood of rapids in rivers.

The larva inhabits a portable case.

I am inclined to remove the *Hydroptilidæ* from the position usually assigned to them between the *Sericostomidæ* and the *Leptoceridæ*, and to place them beside the *Rhyacophilidæ*. The structure of the head and of the ovipositor, the horny ventral process of the antepenultimate segment of the male and its rudiment in the female of nearly all the genera, and the presence in some genera of an appendage to the anterior wing near the base of the post-costa, are the chief points in the imago which appear to indicate affinity between these two families.

But it may be objected to this view that the *Hydroptilidæ* are ranked with the *Inæquipalpidæ*, whereas the *Rhyacophilidæ* are amongst the *Æquipalpidæ*. So far, however, as I have been able to ascertain, the maxillary palpi of the male are five-jointed in the *Hydroptilidæ*, as Pictet stated. The fifth joint can be demonstrated with a Codrington lens without much difficulty in the male of *Agraylea*, and even in *Phrixocoma* under favourable circumstances. But if a $\frac{2}{3}$ object glass and a compound microscope be brought to bear upon specimens immersed in fluid, the palpus is seen to be obviously five-jointed in both sexes in all the genera, although in specimens freshly killed and viewed in air it may have seemed to consist of only four joints. And so the *Hydroptilidæ* being a family of the *Æquipalpidæ* this objection is disposed of; and I am not aware of any remaining to be raised against the proposal to rank them close beside the *Rhyacophilidæ*.

Since this was written I showed my figures to Mr.

M'Lachlan. When he saw a drawing of the maxillary palpus of *Phrixocoma sparsa* ♂, he remarked at once its likeness to the palpus of *Rhyacophila*.

Besides the mouth organs, the appendices of the male are seen with advantage in fluid.

For the investigation of their neuration it is necessary to denude the wings of their hair. This can be done without difficulty if the wing detached from the thorax be laid on a smooth sheet of paper and carefully brushed with a fine camel's hair pencil. The fringes may be left *in situ*, as they do not interfere with the view, and they are not easily removed.

An Analytic Table of the Genera of the Hydroptilidæ.

1	Ocelli present	2
	Ocelli absent	5
2	Spurs 1, 3, 4. Wings acuminate	*Hydroptila*.
	Spurs 0, 3, 4	3
3	Anterior wings rather obtuse	*Agraylea*
	Wings acuminate	4
4	Anterior inner edge with an appendage	*Ithytrichia*
	Anterior inner edge entire	*Oxyethira*
5	Spurs 0, 3, 4, wings acuminate	*Orthotrichia*
	Spurs 0, 2, 4, wings acuminate	*Phrixocoma*

Genus Phrixocoma, nov. gen.

Neuration, Pl. II. 1—1 a: maxillary palpus, III. 1 b.

Hydroptila, Curt. 1834; nec Dalman.

Derivation.—(Gr.) *Phrixo-komes*, with bristling hair.

Imago. Antennæ in the male about half as long as the wings, in the female a quarter as long; stout, moniliform, with coarse adpressed hair which gives to the joints a somewhat scutiform outline, the basal joint longer and thicker than the others; in repose laid together horizontally, but during a halt in running slightly divergent and ascending. Head and prothorax with coarse shaggy hair. Ocelli absent. Maxillary palpi five-jointed, filiform, with moderate, short, spreading pubescence; the first two joints very short, subequal; the third and fourth joints long, subequal; fifth joint rather the longest. Labial palpi filiform, with the apical joint as long as the other two together. Wings lanceolate, acute: the anterior scabrous, with very long fringes, in both sexes with a short appendage to the inner margin near the base whence a fold is produced for-

wards; the discoidal cell open, the anterior branch of the ramus discoidalis simple, the posterior forked with the anterior prong simple, the posterior prong forked; the superior branch of the ramus thyrifer forked, the anterior prong forked, the posterior prong simple; thus there are two adjacent apical forks. The posterior wing with adpressed hair and very long fringes, the costa shallowly concave in the second third, and with one transverse veinlet; the ramus discoidalis forked, the anterior prong simple, the posterior prong forked; the ramus subdiscoidalis forked with simple prongs; thus there is one apical fork. Legs of moderate length, the posterior tibiæ and the base of the posterior tarsus strongly fringed externally; anterior tibia spurless, intermediate with two spurs, the posterior with four. Abdomen with conspicuous appendices, which vary in number with the species; penis setiform, retracted during life, sometimes dilated at the tip; the horny process of the male antepenultimate segment is enclosed by long hairs from the segments.

I can add nothing at present to what has already been published concerning the larva and its case, living as I do in a neighbourhood unsuitable for their investigation.

The species affect rivers and lakes. They occur throughout Europe, from Sweden to Sicily, and from Ireland to Attica; also in Canada and Texas.

Phrixocoma sparsa.

Pl. II. 1. ♂ neuration, 1 b, ♀ genitalia; III. 1—1 a, ♂ genitalia, 1 b, maxillary palpus.

Hydroptila sparsa & *vectis*, Curt. 1834; *H. brunneicornis*, Ste. 1836 (nec Pict.); *H. tineodes*, Burm. 1839; *H. tineoides*, Zet. 1840 (nec Dalm.).

Head and prothorax satiny white, frons with some blackish hairs; palpi whitish; antennæ sometimes pale throughout, sometimes dark throughout, at other times with more or less of the terminal third alone dark, or with a pale ring beyond the middle. Anterior wings black, with glossy white markings, viz.: a large not sharply defined blotch near the base of the post-costa which does not reach the costa; an almost oblique fascia before the middle, which enters both fringes, and is enlarged most in the fringes of the inner margin; this is followed by a dot in the middle of the disk; this is succeeded by a pair of

opposite spots midway between the fascia and the apex of the wing, of which that in the costal fringes is the most conspicuous, and that on the terminal margin sparingly contributes to the fringes; after these is a straight fascia just before the extreme tip of the wing which enters the fringes; fringes purple black. Posterior wings black. Legs testaceous, or fawn colour, with glossy hair. Abdomen greenish, with closely adpressed, silvery-gray hair; the appendices inferiores of the male subulate divergent; the penis is exserted from a bulbous protuberance, and above it is extended a broad semi-campanulate membrane, which is emarginate in the middle; penis sheaths acicular.

Length with closed wings ♂ 4, ♀ 5 mm.

Hab.—England; in warm rivers. Abundant at Burton-on-Trent and Ringwood. June and July. The Netherlands.

I have stated above my doubts respecting the received synonymy, and my reasons for not abandoning it.

Phrixocoma pulchricornis.

Pl. III. fig. 2—2 b, genitalia ♂.

Hydroptila pulchricornis, Pict. 1834.

Head and prothorax with glossy yellowish-white hairs, frons with blackish hairs; palpi whitish; antennæ sometimes black throughout, sometimes with the tip, a ring between the tip and the middle, and more or less of the base whitish. Anterior wings black, with glossy yellowish-white markings, which are more yellowish in the female than in the male, viz.: the base of the wing, a somewhat oblique fascia before the middle which is enlarged in both fringes, especially in those of the inner margin; this is followed by a dot in the middle of the disk; after this is a conspicuous pair of opposite spots which enter the fringes, that on the costa being triangular and the larger; these spots are succeeded by two short longitudinal rows of pale hairs on the disk; and these are followed by a straight fascia just before the extreme tip which sparingly contributes to both costal and terminal fringes; fringes with a purplish gloss. Posterior wings black, with purple-black fringes. Legs pale testaceous, with glossy hair, the femora rather darker. Abdomen greenish, with closely adpressed, glistening hair, the dorsal spots rather indistinct and more linear than usual. Appendices superiores with wide bases, compressed, blade-like, with their very acute points curved upwards, slightly diver-

gent; penis extruded from a large subconical protuberance, and hooked like a crochet needle; penis cover turned aside and curved downwards obliquely from near its flattened base, subulate with the extreme point slightly hooked.

Length with closed wings ♂ ♀ 3 mm.

Hab.—The lower pond in Battlesden Park, Bedfordshire. June. Königsburg.

Phrixocoma forcipata, nov. sp.

Pl. III. fig. 3—3 c, genitalia ♂.

Head and prothorax whitish-yellow (the colour of tow), frons with some blackish hairs; palpi brownish-white; antennæ black throughout, or with a broad white band beyond the middle before the tip, or in the female whitish with dark tips. Anterior wings black with glossy white markings, viz.: some faint longitudinal streaks near the base, an almost oblique fascia before the middle which enters both fringes, and is enlarged on the costa; this is followed by a faint dot in the middle of the disk; this is succeeded by a conspicuous pair of opposite spots, of which that on the costa is much the largest and brightest, and that on the inner margin contributes very little to the fringes; after these come the apical markings, consisting of the edging of the extreme tip at the insertion of the fringes which forms with two dashes in the fringes an ill-defined W, these dashes being not very regular; fringes with a purplish gloss. Posterior wings dark gray. Legs testaceous, with glossy hair. Abdomen green, the tips of the segments and the subpyriform dorsal spots darker; appendices inferiores connivent, slightly arcuate, flattened, with the acute points turned upwards, and with a few stiff black hairs pointed backwards on the outside; appendices superiores fang-shaped, with expanded bases, arcuate, with their acuminate points connivent downwards.

The female appears to want the faint dot after the fascia of the anterior wing.

Length with closed wings ♂ 3, ♀ 4 mm.

Hab.—Oakamoor, Staffordshire, and the River Dove, near Norbury and Ashbourne, Derbyshire. June. Mr. M'Lachlan has a specimen from Ireland; and also a series from Turin, which I think are of this species.

Phrixocoma occulta, nov. sp.

Pl. III. 4—4 b, genitalia ♂ dried.

Head and prothorax above with glossy whitish-yellow

hair, frons with some black hairs; palpi pale testaceous; antennæ dark, with a band beyond the middle, and a part of the basal third yellowish-white. Anterior wings black brown, with glossy white markings, viz.: a large indistinct patch on the inner margin at the base which does not reach the costa, but extends almost to the fascia; the fascia before the middle enters both of the fringes, forming a large spot in the costal fringe, and a smaller one in that of the inner margin; this is followed by a very indistinct dot in the middle of the disk, subtended by some scattered hairs which form a short dash on the margin just clear of the fringes; these are followed by the usual pair of opposite spots, of which the costal spot is the larger; and these in their turn are succeeded by a pair of small subequal opposite spots, which enter the fringes just before the apex. Posterior wings dark gray with dark fringes. Legs and their glossy hair testaceous. Abdomen discoloured in dried specimens; the upper anal fringes dark, the lower pale; appendices inferiores stout, lanceolate, obtuse, slightly divergent, and curved downwards, granulated; appendices superiores (or penis sheaths?) blade-like, long, linear, acute, and strongly-curved upwards; apex of penis straight.

Length with closed wings ♂ 3·5—4 mm.

Hab.—Mappleton, near Ashbourne, Derbyshire, between the bridge and the weir, occurring sparingly with *P. femoralis*, from which it is not at sight distinguished easily (whence the name). June.

Phrixocoma femoralis, nov. sp.

Pl. II. fig. 1 a, neuration ♀; III. 5—5 b, genitalia ♂.

Head and prothorax above with whitish-yellow hair, frons with black; palpi whitish; antennæ sometimes brown-black throughout, sometimes with their basal third pale, sometimes pale throughout, or with only a black band at the tip. Anterior wings black, with glossy yellowish-white markings, viz., a very indistinct patch at the base on the inner margin not reaching the costa, but extending half-way to the fascia; the usual fascia before the middle curved or subangulated, entering and enlarged in both fringes: this is followed by a faint dot in the middle of the disk; this is succeeded by a conspicuous pair of opposite spots, of which that on the costal fringes is larger than the one on the terminal fringes; after these comes an apical W, whose arms are in the fringes, and whose body borders the edge of the tip of the disk at the

insertion of the fringes; in the female the arms of the W sometimes form detached spots, and the pale markings are less conspicuous than those of the other sex; fringes with a purplish gloss; posterior wings dark gray. Legs testaceous with glossy hair; femora and anterior tibiæ black (whence the name). Abdomen greenish, almost olivaceous; each segment with a pair of longitudinal dorsal lines, between which are a pair of pedunculated round spots, darker; above the penis is a membranous trowel-shaped lobe; and there are two long setiform processes for penis sheaths.

Length with closed wings ♂ and ♀ 3·5—4 mm.

Hab.—The Dove, at Mappleton, Derbyshire, between the bridge and the weir, in June. Also at Bellagio, Lago di Como, early in August.

(?) *Phrixocoma fuscicornis.*

Pl. II. 2, neuration ♂.

Hydroptila fuscicornis! Schn. 1845; *H.* ‡ *costalis,* Kol. 1859, *obscura* idem 1848.

Head and prothorax silvery-white, frons with some blackish hairs; palpi brown-black; antennæ entirely brown-black. Anterior wings brown-black with silvery white markings, viz.: a conspicuous costal spot with a very ill-defined dash in the fringes of the inner margin opposite to it, in the place of the usual fascia, and another costal spot as large as the first between it and the apex of the wing, in the place of the usual pair of opposite spots. Posterior wings dark gray. Legs brown-black, the intermediate and posterior tibiæ and tarsi with a slight testaceous gloss. Abdomen not preserved well enough to afford figures of appendices being taken; anal fringes dark; penis exserted from a protuberance, setiform, thickened at the apex. Ventral process of the antepenultimate segment long, club-shaped.

Long. 2 mm.

Hab.—Near Messina; middle of March. Case like yellow grains of rice. (Schn.)

I am doubtful whether this species belongs to *Phrixocoma.* The structure of the antennæ and the number of the spurs correspond; but the neuration of the wings and their ornamentation is different.

Phrixocoma albicornis.

Hydroptila albicornis, Hag. 1861.

"Gray; antennæ stout, snow-white, with the middle and apex fuscous; palpi whitish; head with snow-white hair, the vertex with fuscous hair; thorax fuscous; feet whitish, the posterior ones ciliated with white; anterior wings grayish-fuscous, ciliated with gray, the margin and disk pointed with snow-white; posterior wings gray, clothed and ciliated with gray hair ♀."

"Length to tip of wings $3\frac{1}{2}$ millimetres, expanse 6 millimetres."

"*Hab.*—St. Lawrence River, Canada. (Osten Sacken)." [After Hagen.]

Genus Hydroptila.

Hydroptila, Dalm. 1819: type, *H. tineoides*.

Imago. Antennæ short, stout, moniliform, with coarse adpressed hair which gives to the joints a shield-shaped form; some of the joints before the middle cylindrical; the basal joint rather longer and thicker than the others. Head and prothorax with long coarse hair. Ocelli present. Maxillary palpi filiform, with closely adpressed hair, five-jointed; the first two joints very short, subequal; the third and fourth oblong, equal to each other; the fifth joint not much longer than the fourth. Labial palpi with joints gradually increasing in length and thickness towards the tip, the terminal joint oblong. Wings linear lanceolate, acuminate, with very long fringes; the anterior scabrous, without an appendage to the postcosta; the posterior with adpressed hairs. Legs of moderate length, the intermediate and posterior tibiæ and the base of the posterior tarsus strongly fringed externally; anterior tibia with one apical spur, intermediate with one middle and two apical spurs, the posterior tibiæ with two spurs in the middle and two at the apex. Abdomen with conspicuous appendices in the male: penis setiform; ventral lobe of the antepenultimate segment perhaps wanting.

I caught one specimen, a male, on board a Rhine steamer off Johannisberg, in July. Having no opportunity for describing it, I placed it in fluid. This has prevented me from describing the neuration and the form of the posterior wings.

Hydroptila tineoides.

Hydroptila tineoides, Dal. 1819.

"Fusca capite, antennis, pedibusque pallidis; alis fuscis pilosulis, superioribus fasciis duabus punctoque apicali albis. [Tab. 111. (Act. Holm. 1819, i. p. 125)]."

"Habitat in monte Kinnekulle ad litora lacus Wenneri, passim frequens, supra undas volitans; [etiam Holmiæ]."

"Caput hirsutie crispata verticis alba, frontis nigra . . . . Ob hirsutiem verticis dijudicare nequeo, anne adsint ocelli nec ne. Antennæ pallidæ, nitidulæ, apice nigricante, articulis circiter 26 æqualibus. Thorax griseo-pilosus. Abdomen pallidum nitidulum. Pedes albicantes femoribus anticis infuscatis. Tibiæ anteriores apice calcaratæ, posticæ rectæ fimbriatæ ante apicem spinulis duabus, interiore majore, armatæ, et in ipso apice spinulis duabus minoribus. Alæ anticæ . . . . fuscæ, fasciis duabus albis pilosis nitidulis æquali spatio remotis, exteriore sæpius interrupta; punctum {inter} illas in medio, et aliud in ipso apice ejusdem coloris. Signaturæ illæ tamen facile deteruntur. Alæ inferiores . . . . fusco-pilosulæ."—Dalman.

Expanse of wings indicated in the plate.

Note.—The brackets [ ] enclose words added to the original description, whilst the brackets { } enclose words left out from it in the reprint in the "Analecta Entomologica." The omissions . . . . comprise details concerning characters of generical significance.

Genus Ithytrichia, nov. gen.

Neuration, Pl. II. 3.

Derivation.—(Gr.) *Ithu-thrix*, straight-haired as opposed to woolly.

Imago. Antennæ in the male half as long as the wings, filiform, clothed with adpressed hairs, which give to the joints a subscutiform appearance, the basal joint slightly larger than the rest. Head with long coarse hair. Ocelli present. Maxillary palpi filiform, with moderate slightly spreading hair, five-jointed; the first two joints very short, subequal, the next two of moderate length subequal, the fifth a little the longest. Labial palpi with the first joint very short, the second nearly as long as the third, the third subcylindrical, scarcely compressed. Prothorax with

dense shaggy hair. Wings linear lanceolate acute, with very long fringes; the anterior scabrous, with a short appendage to the post-costa near the base; discoidal cell open, the anterior branch of the ramus discoidalis simple, the posterior forked with the anterior prong simple, the posterior prong forked; the superior branch of the ramus thyrifer forked, with the anterior prong forked, the posterior prong simple; thus there is one fork before and behind the apex; the posterior wings with adpressed hair, the costa shallowly concave just before the middle, and one transverse veinlet; the ramus discoidalis forked with the anterior prong simple, the posterior prong forked; the ramus subdiscoidalis forked with simple prongs; thus there is one fork before the apex. Legs of moderate length, the posterior tibiæ pinnately fringed; anterior tibiæ spurless, the intermediate with three, the posterior with four spurs. Abdomen with short stout appendices, the ventral process of the antepenultimate segment slender, penis concealed.

The only English species known is found in running water. Mr. M'Lachlan's collection contains a species from Hungary.

Ithytrichia lamellaris, nov. sp.

Pl. II. 3, neuration ♂; III. 6—6 b, genitalia ♂.

? *H. brunneicornis*, Pict. 1834.

Head and prothorax with tow-coloured hair, frons with blackish hair; palpi smoky white; antennæ whitish-yellow, the last seven or eight joints blackish. Anterior wings black with yellowish-white markings, viz.: some longitudinal streaks near the base; an irregular angulated fascia before the middle which is enlarged in the fringes of the inner margin; this is followed by a dot in the middle of the disk; this is succeeded by a conspicuous pair of opposite spots, of which the costal spot is the larger and is followed by one or two irregular and indistinct dots on the edge of the disk and on the longitudinal nervures; these are succeeded by the edging of the extreme tip of the disk; fringes black with a purplish gloss; posterior wings black or dark gray. Legs testaceous with glossy hair, the femora darker. Abdomen blackish; appendices superiores stout, flattened, with the points turned in like a hooked claw; during life when viewed in air they appear to be a membraneous lobe above the penis (hence the name).

Female very similar, but with the markings of the wings less distinct.

Length with closed wings ♂ ♀ 4 mm.

Hab.—The Sandy Brook, near Hanging Bridge, Ashbourne, Derbyshire. June. Does *Hydroptila brunneicornis*, Pict. belong here? The colour of the antennæ is similar, and the number of spurs is stated to be 0, 3, 4, by Dr. Hagen in a letter from him to Mr. M'Lachlan, he having examined types.

Genus Orthotrichia, nov. gen.

Neuration, Pl. II. 4 ♂, 4 a ♀.

Hydroptila (part), M'Lachlan, 1865.

Derivation.—(Gr.) *Ortho-thrix*, with hair upstanding or on end.

Imago. Antennæ of the male about three-quarters as long as the wings, filiform, the joints subcylindrical with closely adpressed hairs, the basal joint rather larger than the others: in repose divergent and ascending. Ocelli absent. Maxillary palpi filiform, with moderate slightly spreading hair, five-jointed; the first two joints very short, equal; the next two joints subequal to one another; the fifth joint a little the longest. Labial palpi filiform, with the joints successively increasing slightly in length. Head and prothorax with dense shaggy hair. Wings linear lanceolate, acuminate, with very long fringes; the anterior scabrous, without an appendage to the post-costa, discoidal cell open, the ramus discoidalis forked, with both prongs forked; the superior branch of the ramus thyrifer forked, the anterior prong forked, the posterior prong simple; thus there are two forks before the apex and one behind it; the posterior wings with adpressed hair, the costa shallowly concave in its second third, and with one transverse veinlet; the ramus discoidalis forked, with the anterior prong simple, the posterior prong forked; the ramus subdiscoidalis forked with simple prongs; thus there is one fork before the apex. Legs of moderate length, the posterior tibiæ and the base of the tarsus strongly fringed externally; anterior tibia spurless, intermediate with three, posterior with four spurs. Abdomen with small appendices and setiform penis, the antepenultimate segment in the male with a slender ventral lobe; after death the penis is usually extruded.

The species inhabit warm rivers and lakes in England,

Königsburg (sp. dub. Hag. letter to M'Lach.), Italy and Madeira; also The Netherlands.

Orthotrichia angustella.

Pl. II. 4—4 a, neuration ♂ ♀; III. 7—7 c, genitalia ♂.

Hydroptila angustella, M'Lachlan, 1865.

Head and prothorax with whitish or tow-coloured hair; palpi very pale testaceous; antennæ pale fawn-colour, sometimes with a very narrow whitish ring just before the tip, at other times with three black rings separated by whitish spaces, one ring near the tip, the others between it and the middle. Anterior wings black, with glossy pale tow-coloured markings, viz.: ♂, the inner margin, an indistinct fascia before the middle, which is preceded by some faint streaks along the disk; after this is a large costal spot subtended by an oblique longitudinal streak on the disk which enters the terminal fringe and is itself subtended by another shorter streak which reaches but does not enter the fringe; after this come two pairs of opposite spots in the fringes, sometimes more or less confluent across the disk; and last of all the extreme tip of the wing; in the ♀ the discal markings are very indistinct or absent, the fringes (especially where the costal blotch should be) and the indistinct fascia only are conspicuously pale. Posterior wings gray. Legs very pale testaceous with glossy hair. Abdomen green, with pale joinings, the bases of the segments darker, each segment with a dorsal pair of dark subquadrate or oval blotches; the appendices inferiores slightly ascending, triangular, flat, and incurved; penis exserted from an oval hump adpressed to one side of which is an acute blade-like process curved upwards; there is a setiform sheath, and the apex of the penis is thickened and incised; in the female there is a slight apical projection beneath the penultimate segment.

Length with closed wings ♂ 3·—3·5, ♀ 4·5 mm.

Hab.—Standing water and slow streams in the south of England; common at Ringwood along the bridges. May, June, July. Bellagio, Lago di Como, August. The Netherlands.

Orthotrichia atra.

Hydroptila atra, Hag. 1865.

"Capite et thorace atris; antennis unicoloribus atro-fuscis; alis brunneis, fusco-pilosis, griseo-fimbriatis; pedibus fuscis, tibiis posticis griseo-fimbriatis."

"Long. cum alis 2½ mill.; exp. alar. 5 mill."

"The head slightly inflated, with two rounded tubercles close to the occiput. Antennæ slightly more distant than is usual in the species of this genus, stout, as long as the body. Wings very narrow, pointed. Legs rather strong, the posterior pair long. The colour is wholly of a uniform, rather dark, blackish-brown; the wings brownish, with brown pubescence, and with long grayish-brown fringes; the feet dark brown, with grayish hairs on the posterior thighs. (The individual has lost its abdomen, but is otherwise in good condition.)"

"Madeira." [After Hagen.]

The specimen is now in rather worse condition. Besides the abdomen, it has lost its head, one antenna, and both of its intermediate legs. The joints of the antennæ are rather longer than is usual. The wings are as broad as those of a *Phrixocoma;* the inner margin of the anterior wing appears to be destitute of an appendage, and, according to Dr. Hagen, the ocelli are wanting. A figure of the neuration of the wings sent by him in a letter to Mr. M'Lachlan (from which I obtained information of the want of ocelli), exhibits conformity to the neuration of *Orthotrichia angustella,* excepting in the presence of a cross-veinlet in the middle of the anterior wing. I am inclined to consider this only a point of secondary importance, having met with a similar specific difference of neuration in the genus *Ithytrichia.* Therefore I have no doubt that *H. atra* is referrible to *Orthotrichia,* because the absence of ocelli, the form of the antennæ and anterior wings, and the neuration of the wings, do not admit of its being otherwise disposed of.

Dr. Hagen, in his letter above alluded to, states that a Madeiran species of *Hydroptilidæ* with ocelli was formerly present in Mr. Wollaston's collection. The only specimen was of small size, and was lost by an accident in the course of working.

Mr. M'Lachlan possesses another specimen of an undescribed *Orthotrichia* from the same island. Being unable to figure the appendices I do not describe it.

Genus Oxyethira, nov. gen.

Neuration, Pl. II. 5; 5 a, posterior wing.

Derivation.—(Gr.) *Oxu-etheiros,* with sharp-pointed hair.

Imago. Antennæ in the male half as long as the wings,

submoniliform, with sparse closely adpressed hair which gives to the joints a subscutiform outline; the basal joint rather larger than the others; in repose they are approximated to each other and ascending. Head and prothorax with dense shaggy hair. Ocelli present. Maxillary palpi filiform, with moderate slightly spreading hair, five-jointed; the first two joints very minute, subequal; the third slightly shorter than the fourth; the fifth slightly the longest. Labial palpi with the first joint very short, the second not so long as the third, which is oblong-ovate and slightly compressed. Wings linear lanceolate, acuminate, with very long fringes; the anterior scabrous, without an appendage to the inner margin, the discoidal cell open; the anterior branch of the ramus discoidalis simple, the posterior branch forked with simple prongs: the superior branch of the ramus thyrifer forked with simple prongs; thus there is a primary fork before and behind the apex; the posterior wings with the costa elbowed near the base, and with adpressed hair; the ramus discoidalis simple; the ramus subdiscoidalis forked with simple prongs; thus there is one primary fork behind the apex; no transverse veinlet. Legs of moderate length, the posterior with the tibia and the base of the tarsus strongly fringed externally; anterior tibia spurless, intermediate with three spurs, the posterior with four. Abdomen with small appendices and setiform penis; the horny ventral lobe of the antepenultimate segment in the male very short.

The English species occurs in ponds. The genus is represented in Great Britain, France, Germany (perhaps Switzerland), Turkestan and New Zealand. The Turkestan and another species of doubtful locality are at present undescribed, and are in Mr. M'Lachlan's collection; the former being on loan from the Moscow Museum.

Oxyethira costalis.

Pl. II. 5, neuration ♂; 5 a, posterior wing; III. 8—8 a, genitalia ♂.

Hydroptila costalis, Curt. 1834; *H. tineoides*, Steph. 1836; ? *H. flavicornis*, Pict. 1834.

Head and prothorax whitish-yellow (the colour of tow), frons with some blackish hairs; palpi smoky white; antennæ pale fawn-colour throughout, sometimes with an indistinct narrow ring before the tip dusky. Anterior wings black, with glossy, tow-coloured markings, viz.: a

slender fascia before the middle which expands in both fringes and is preceded by some indistinct clouds on the disk; this is followed by a large triangular blotch extending from the costal fringes almost across the wing and subtended by a pale dash in the terminal fringes; this is followed by a small spot on the costa subtended by a larger one on the terminal margin, both entering the fringes; after these come the extreme tip, and a small spot just before it in the terminal fringes; posterior wings gray, with concolorous fringes. Legs testaceous, with glossy hair. Abdomen pale greenish, with two dorsal rows of pedunculated black spots; appendices superiores stout, claw-shaped, with the points turned inwards; two little tubercles on each side of the penis may represent sheaths.

In the female the basal clouds on the anterior wing are less distinct; the fascia is interrupted; and an oblong blotch on the costa subtended by a spot on the disk, takes the place of the triangular blotch. Antennæ a quarter as long as the wings.

Length with closed wings ♂ 3—3·5, ♀ 4 mm.

Hab.—Ponds in Woburn and Battlesden Parks, Bedfordshire, which are infested with *Polygonum amphibium*. May, June, July. It occurs also in Scotland, and the Département de l'Aube, near Bar-sur-Seine (M'Lachlan's collection); also at the end of May at Königsburg (Hag. in letter to M'Lach.), and in Brabant.

Oxyethira albiceps.

Hydroptila albiceps, M'Lach. 1862.

Head and prothorax whitish-yellow, frons with some blackish hairs; palpi grayish-testaceous; antennæ pale testaceous, with the tip dark gray; anterior wings grayish-fuscous; the inner margin towards the base, and a very indistinct fascia before the middle which expands in the fringes of the inner margin and is extended along it for a little distance as a narrow streak which lies partly in the fringes and partly in the contiguous portion of the disk where it is interrupted by a dark spot on the longitudinal fold, paler; there are also a pair of opposite spots and some discal streaks in the terminal region of the wing, and also a transverse blotch forming a fascia immediately before the dark apex of the wing, paler. Posterior wings

pale gray. Anterior legs gray, with pale joinings to the tarsi; posterior legs testaceous. Abdomen (wanting in Mr. M'Lachlan's specimen "brown above, silvery beneath."

Long. ♂ 2 mm.

Hab.—New Zealand.

Mr. M'Lachlan thinks that the dark extreme apex of the anterior wing was wanting in the type; hence the discrepancy between my description and his.

Genus Agraylea.

Neuration, Pl. II. 6.

Agraylea, Curt. 1834; *Hydroptila* (part), Zet. 1840; *Hydrorchestria*, Kolen. 1848; *Agraules*, Walk. 1852.

Imago. Antennæ of the male about three-quarters as long as the wings, in the female about half as long, filiform; the joints loosely articulated, with adpressed hair, the basal joint rather the largest; in repose divergent and ascending. Head and prothorax with long, coarse, shaggy hair; ocelli present; maxillary palpi five-jointed, filiform, with sparse spreading pubescence; the first two joints very short, subequal, the next two subequal and of moderate length, the fifth joint rather the longest. Labial palpi with the apical joint a little longer than the first two joints, and hardly at all broader than thick. Anterior wings subtrapezoid or narrowly oblong, with a small appendage to the inner edge near the base, the apex rather obtuse, the disk scabrous, long fringes, and the discoidal cell open; the anterior branch of the ramus discoidalis forked near its origin, with simple prongs, the posterior branch forked near its middle, with simple prongs; the superior branch of the ramus thyrifer forked, with the anterior prong forked, the posterior prong simple; thus there are two forks before the apex and one behind. Posterior wings ovato-lanceolate acute, the costa entire, hair adpressed, fringes very long, no transverse veinlet; the ramus discoidalis forked, with the anterior prong simple, the posterior prong forked; the ramus subdiscoidalis forked, with the anterior prong forked, the posterior prong simple; thus there is a fork on either side of the apex. Legs of moderate length, the posterior tibia with sparse short hair, not fringed; anterior tibia spurless, the intermediate with three spurs, the posterior with four. Abdomen with stout short appendices and setiform penis, which is concealed

during life; the horny lobe from the antepenultimate segment beneath is rather long.

Species occur throughout Europe and in Turkestan. The Turkestan species in Mr. M'Lachlan's possession, sent from the Moscow Museum, is undescribed.

Agraylea multipunctata.

Pl. II. 6, neuration; III. 9—9 a, genitalia ♂.

Agraylea multipunctata and *sexmaculata*, Curt. 1834; *Hydrorchestria argyricola? multipunctata* and *sexmaculata*, Kolen. 1848; *Agraules multipunctata* and *sexmaculata*, Walk. 1852.

Head and prothorax with pale yellowish-gray hair; palpi pale; antennæ black. Anterior wings usually with pale-yellowish markings; these are sometimes,—on the inner margin a long space near the base followed by two shorter ones, of which one is near the middle, the other near the arculus, very conspicuous; on the terminal margin two or three small spots, the first two of which enter the fringes; on the costal margin a conspicuous blotch at the pterostigmatic region, followed by two minute spots towards the tip; the disk has many spots, often there are three larger than the rest in the middle of the post-median portion of the wing. Posterior wings unicolourous gray, their fringes with a faint purplish gloss. Legs greenish-gray or subolivaceous, or sometimes testaceous with blackish femora, with pale testaceous hair. Abdomen greenish; appendices superiores finger-like, the tips slightly expanded, curved downwards; appendices inferiores distant, curved upwards, also finger-like; penis with the tip expanded; ventral process of the antepenultimate segment flattened, the apex truncate, slightly expanded and just turned down, the base with a small, projecting, triangular tooth.

Long. ♂ ♀ 4—5 mm.

Hab.—England, in lakes and slow rivers; common at Ringwood. June, July, August. Sweden (M'Lachlan's collection). Kolenati's *A. argyricola* is possibly a distinct species. I have never seen *A. multipunctata* with a pale band before the tip of the antennæ, nor with whitish hair upon the head and prothorax. Tourists in southern Sweden (Stockholm, Dalecarlia) should look out for this form, to determine whether it is a variety only of *A. mul-*

tipunctata, which itself occurs in that country coloured as it is in England. Mr. M'Lachlan has a specimen with wings uniformly black, taken in England.

Agraylea pallicornis, nov. sp.

Pl. III. 10—10 a, genitalia ♂.

Head and prothorax with pale-yellowish hair, the occipital tufts blackish; palpi pale; antennæ pale testaceous throughout. Anterior wings brown-black, closely spotted with yellowish, with an interrupted streak along the inner margin, and three of the spots along the costa slightly larger than the others, not very conspicuous. Posterior wings unicolorous gray. Legs testaceous, with like coloured hair. Abdomen faded in dried specimens; penis sheath ascending, forked, the upper prong the longest and slightly curved inward; penis slightly thickened at the tip; appendices (?) inferiores large, triangular, concave; ventral process of the antepenultimate segment long, slender, ascending, with the tip curved downwards.

Long. ♂ 5—5·5 mm.

Hab.—Turin (Chiliani). From 4 ♂ in Mr. M'Lachlan's collection.

Agraylea insularis.

Hydrorchestria insularis, Hag. 1865.

"Dull coal black. Wings brown, with the membrane somewhat shining."

"The size of *Orthotrichia atra*."

Hab.—Madeira (Hag.).

Species generis incerti.

Hydroptila cursitans, Hag. 1859.

"Tota nigerrima; alis valde angustis, acutissimis, nigro-ciliatis; tarsis posticis pallidis."

"Long. 2 mm."

"*Hab.*—Rainbodde, vulgaris" (Hag.).

Hydroptila tarsalis, Hag. 1861.

"Gray; antennæ somewhat robust, rather long, fuscous with gray hair; palpi black, the apex snow-white; head black, the vertex white; thorax fuscous; feet whitish, anterior tibiæ, spurs, and tarsi fuscous, the latter annulated with white" [spurs 0, 3, 4]; "posterior feet with gray cilia; anterior wings fuscous, the anterior margin black,

ciliated with gray, and pointed with snow-white; posterior wings with gray hairs and cilia. Male."

"Length to tip of wing 3 mm.; expansion 5½ mm."

"*Hab.*—St. Lawrence River, Canada (Osten Sacken). Is this the sex of the preceding species?" [After Hagen.]

[The "preceding species" is *Phrixocoma albicornis*, Hag., and therefore the question may be answered in the negative, the difference in the spurring of the legs precluding their identity. When Dr. Hagen wrote, it was not known that both sexes throughout a genus of the *Hydroptilidæ* have the spurs alike in number, specimens with 0, 2, 4 spurs being hitherto considered to be the males of specimens with 0, 3, 4 spurs if both were caught in the same locality.]

Hydroptila pumilio, Zet. 1840.

"Tota fusca, pedibus flavo-testaceis; alis omnibus cinereis subpubescentibus, margine distincte ciliatis, superioribus nervorum longitudinalium duobus versus marginem interiorum breviter furcatis. ♂ long. ¾ exp. vix 2 lin."

"*Habitat* in Lapponia Umensi, ad Lycksele et Åsele 26 Jul.—17 Aug."

"♂ Antennæ longitudo corporis fuscæ vix annulatæ sed basi paullo dilutiores. Alarum furcæ apicales ad marginem interiorem duæ, ramis brevibus furcatæ. Tibiæ posticæ perspicue ciliatæ." [After Zetterstedt.]

[Dr. Hagen, in his "Phryganidarum Synopsis Synonymica," refers this species to the genus *Agraylea*. I am inclined, however, to suspect it may be related to *Phrixocoma*. The small size of the insect, and the remarked shortness of the apical forks, seem to exclude it from the first mentioned genus, though the number of forks stated by Zetterstedt prevents its being classed with *Phrixocoma*.]

Geographical Distribution of Species.

Phrixocoma sparsa, p. 133 .. .. England
„ *pulchricornis*, p. 134 .. .. England and Prussia
„ *forcipata*, p. 135 .. .. Ireland, England and Italy
„ *occulta*, p. 135 .. .. England
„ *femoralis*, p. 136 .. .. .. England and Italy
? „ *fuscicornis*, p. 137 .. .. Sicily
„ *albicornis*, p. 138 .. .. .. The St. Lawrence
Hydroptila tineoides, p. 139 .. .. Sweden
„ *sp.* ——, p. 138 .. .. The Rhine
Ithytrichia lamellaris, p. 140 .. .. England
„ *sp.* ——, p. 140 .. .. Hungary
Orthotrichia angustella, p. 242 .. .. England, Italy and ? Prussia
„ *atra*, p. 142 .. .. Madeira
„ *sp.* ——, p. 143 .. .. „
Oxyethira costalis, p. 144.. Scotland to France & England to Prussia
„ *albiceps*, p. 145 .. .. New Zealand
Agraylea multipunctata, p. 147 .. .. .. England and Sweden
„ *pallicornis*, p. 148 .. .. Italy
„ *insularis*, p. 148 .. .. Madeira
„ [*succinica*], p. 127 .. .. Fossil in amber
Gen. —— *cursitans*, p. 148 .. .. Ceylon
„ *tarsalis*, p. 148 .. .. The St. Lawrence
„ *pumilio*, p. 149 .. .. Lapland

EXPLANATION OF THE PLATES.

Pl. II. The wings pointing to the right are from ♂ subjects; those pointing to the left are from ♀ subjects.

Fig. 1. *Phrixocoma sparsa* ♂ wings.
1*a*. „ *femoralis* ♀ „
1*b*. „ *sparsa* „ apex of abdomen beneath with ovipositor extruded.
2. „ *fuscicornis* ♂ wings.
3. *Ithytrichia lamellaris* „ „
4. *Orthotrichia angustella* „ „
4a. „ „ ♀ anterior wing.
5. *Oxyethira costalis* ♂ wings.
5*a*. „ „ clothing of posterior wing: hairs on the costal margin disposed so as to fit into the fold of the anterior wing as in some of the preceding genera, and in *Mystacides* as is mentioned by M'Lachlan.
6. *Agraylea multipunctata* ♂ wings.

Pl. III. The figures are from freshly killed specimens where the contrary is not affirmed.

Fig. 1. *Phrixocoma sparsa* ♂ genitalia beneath
1*a*. „ „ „ „ sideways.
1*b*. „ „ „ maxillary palpus.
2. „ *pulchricornis* „ genitalia sideways.
2*a*. „ „ „ „ „
2*b*. „ „ „ „ „ (dried).
3. „ *forcipata* „ „ beneath.
3*a*. „ „ „ inf. append., sideways.
3*b*. „ „ „ idem, with appendix superior, obliquely beneath.
3*c*. „ „ „ sup. append. with penis, above.
4. „ *occulta* „ genitalia sideways (dried).
4*a*. „ „ „ „ beneath (dried).
4*b*. „ „ „ „ behind (dried).
5. „ *femoralis* „ „ sideways.
5*a*. „ „ „ projection seen from above.
5*b*. „ „ „ „ „ beneath.
6. *Ithytrichia lamellaris* „ apex of abdomen sideways.
6*a*. „ „ „ appendices above.
6*b*. „ „ „ „ beneath.
7. *Orthotrichia angustella* „ genitalia sideways from the left.
7*a*. „ „ „ „ above.
7*b*. „ „ „ „ beneath.
7*c*. „ „ „ „ sideways from the right.
8. *Oxycthira costalis* „ „ sideways.
8*a*. „ „ „ „ beneath.
9. *Agraylea multipunctata* „ „ sideways.
9*a*. „ „ „ „ beneath.
10. „ *pallicornis* „ „ sideways (dried).
10*a*. „ „ „ „ „ (dried).

VII. *A Monographic List of the species of* Gasteracantha, *or Crab-spiders, with descriptions of new species, &c.* By A. G. Butler, F.L.S., F.Z.S., &c.

[Read 3rd February, 1873.]

In the preparation of the present list, I have found M. Simon's recent subdivisions (Hist. Nat. des Araign.) of great use; he has not, however, described all the varieties of spining in this multiform genus, and therefore I have added several, adopting his view of their sub-generic value.

In this paper I have described nineteen species which appear to me to be quite new, some of them being brilliantly coloured, and others very remarkable in form.

I am indebted to the Rev. O. P. Cambridge for calling my attention to Koch's great work on the *Arachnida* of Australia, now being published at Nuremburg.

Sub-genus Macracantha, Simon.

1. G. arcuata.

Aranea arcuata, Fabricius, Ent. Syst. 3, p. 425, n. 65.

Var. *Gasteracantha arcuata*, Koch, Arachn. 4, p. 34; pl. 118, fig. 270 (1837).

Ceylon; Java, *Argent.* B.M.

2. G. curvicauda.

Epeira curvicauda, Vauthier, Ann. Sci. Nat. 1, p. 261, pl. 18, figs. 1—6 (1824).

Plectana arcuata? Doleschall, Acta Soc. Scient. Indo-Nederl. 5, pl. 12, fig. 3 (1859).

Java, *Argent;* Borneo, *Wallace.* B.M.

Seems chiefly to differ from *G. arcuata* in its shorter spines.

Sub-genus Tatacantha.

Abdomen unequally hexagonal, broader behind than before, with six spines, two short at anterior lateral angles, two long, obliquely ascending (sometimes clubbed at extremity and pilose), and two slightly divergent, rather short, at posterior angles.

Typical form *G. clavatrix.*

3. G. remifera, n. sp. Pl. IV. fig. 5.

Female; length of abdomen $3\frac{1}{4}$ lines; breadth at widest part, excluding spines, 4 lines; entire length 5 lines; posterior lateral spines 7 lines.

General form and appearance of cephalothorax and abdomen that of *G. arcuata*, but the long divergent lateral spines of the same character as those of *G. clavatrix*, from which they differ chiefly in their much greater length and less abruptly formed club.

Cephalothorax pitchy, with central area behind caput testaceous; an orange spot on each side of central oculiferous prominence; eyes golden yellow; falces black, castaneous internally; maxillæ and legs pilose, brownish-testaceous with the joints blackish, but the three front pairs with femora bright testaceous; abdomen above dirty ochraceous, with sixteen impressed black spots round the margin, and four, forming a trapezoid in the centre; spines six in number, blue-black, pilose, divergent, straight, otherwise arranged as in *G. curvicauda;* ventral surface dirty ochraceous, speckled with black, deeply wrinkled transversely, strongly but sparsely punctured and pilose; region of spinnerets black; labium and sternum testaceous, clouded with brown.

Ceylon, *Thwaites*. 3 specimens. B.M.

4. G. nigrisparsa, n. sp. Pl. IV. fig. 11.

Female; length of abdomen $3\frac{1}{2}$ lines; breadth at widest part, excluding spines, $4\frac{1}{4}$ lines; entire length, excluding spines, $4\frac{3}{4}$ lines.

General form of the preceding species, but the long divergent lateral spines more slender, with the club curved and more suddenly formed.

Cephalothorax black; eyes pale crystalline yellow; falces black; maxillæ pitchy, testaceous at base; legs brown, pilose; femora of two front pairs testaceous; abdomen above smoky ochraceous, irrorated, especially on the front margin, with black; impressed spots as in preceding species; ventral surface dull ochraceous, irrorated with black, deeply wrinkled transversely, with black impressed spots here and there; region of spinnerets black; labium and sternum testaceous.

Philippines. 2 specimens. B.M.

5. G. clavatrix.

Plectana clavatrix, Walckenaer, Apt. 2, p. 186, n. 56, 1837—39).

Celebes, Menado, *Ida Pfeiffer*. B.M.

6. G. globulata.

Plectana globulata, Walckenaer, Apt. 2, p. 151 (1837).

"Java and Sumatra," *Walckenaer;* Malacca, *Wallace.* B.M.

Sub-genus Actinacantha, Simon.

7. G. Blackwallii.

Gasteracantha Blackwallii, Keyserling, Sitzungsber. der Isis zu Dresden, p. 65; pl. 1, fig. 1 (1863, edit. 1864).

"Madagascar," *Keyserling.*

8. G. sororna, n. sp. Pl. IV. fig. 15.

Female; length of abdomen 3½ lines; breadth at widest part, excluding spines, 4 lines: entire length 5 lines; posterior lateral spines 3½ lines; anterior ½ a line; of posterior margin ¾ of a line.

Cephalothorax as usual; abdomen subrotundate, with eight unequal angles, and six acute divergent spines; two on anterior lateral angle shortest, directed obliquely forwards; two, seven times as long and robust, on posterior lateral angle, directed obliquely backwards and upwards; two, short, on posterior margin, horizontal and widely divergent.

Cephalothorax dull black, slightly pilose, with anterior edge slenderly castaneous; falces and legs pitchy; abdomen brownish-testaceous; four central and sixteen marginal impressed brown spots; spines blue-black, rugose; ventral surface same colour as above, rugose, transversely wrinkled across the central area, and coarsely punctured at the sides.

Madras, *Jerdon.* 1 specimen. B.M.

Nearly allied to *G. Blackwallii* of Keyserling.

9. G. helva (? Lepelletieri).

Gasteracantha helva, Blackwall, Ann. and Mag. Nat. Hist. S. 3, vol. 14, p. 42 (1864).

? *Epeira Lepelletier*, Guérin, Enc. Méth. 10, p. 764.

Plectana Lepelletieri, Walckenaer, Apt. 2, p. 156, n. 9 (1837).

?*Plectana prætextata*, Doleschall, Acta Soc. Scient. Indo-Nederl. 5, pl. 8, fig. 4; pl. 11, fig. 6 (1859).

Siam, *Bowring, &c.* B.M.

10. G. horrens.

Gasteracantha horrens, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 303, n. 11 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 21 (1868).

"Assam," *Thorell;* Sp. ead. ? Sikkim, *Dr. Hooker*. B.M.

11. G. hepatica.

♀ *Gasteracantha hepatica*, Koch, Arachn. Austral. 1, p. 8, n. 8, pl. 1, fig. 5.

"Java and Sumatra," *Koch*.

12. G. scintillans, n. sp. Pl. IV. fig. 9.

Female; length of abdomen 3 lines; breadth at widest part, excluding spines, 4 lines; entire length $4\frac{1}{2}$ lines; posterior lateral spines 3 lines, anterior 1 line; of posterior margin 2 lines.

Cephalothorax of normal type; abdomen hexagonal, with six acute divergent spines; two on the anterior lateral angle, short, directed obliquely forwards; two, three times as long, on the posterior lateral angle, directed obliquely backwards, and nearly vertical, and two shorter ones on the posterior margin, horizontal and widely divergent.

Cephalothorax, falces, legs, maxillæ, labium and sternum shining black; abdomen with central area dark brick-red; margin and bases of spines coarsely granulose, metallic green and fiery copper-coloured; spines blue-black; four central and sixteen marginal impressed black spots; ventral surface coarsely granulose, metallic green and fiery copper-coloured, deeply wrinkled and impressed transversely, the sulcæ being black.

Hab. — ? 1 specimen. B.M.

The most gorgeously coloured spider in this genus.

13. G. regalis, n. sp. Pl. IV. fig. 7.

Female; length of abdomen $3\frac{1}{4}$ lines; breadth at widest part, excluding spines, 4 lines; entire length $4\frac{1}{2}$ lines; posterior lateral spines $2\frac{1}{2}$ lines, anterior 1 line; of posterior margin $1\frac{3}{4}$ line.

Cephalothorax of normal type; abdomen hexagonal, with six acute divergent spines; two on the anterior lateral angle, short, directed obliquely forwards and upwards, two much longer on posterior lateral angle, directed obliquely backwards and nearly vertical, and two rather shorter on posterior margin, horizontal and widely divergent.

Cephalothorax, falces, legs, maxillæ, labium and sternum

shining black; abdomen ochraceous, four central and eighteen marginal impressed black spots, and two or three dots; spines metallic purple, granulose at base; ventral surface coarsely granulose, metallic purple, deeply wrinkled and impressed transversely, the sulcæ being olivaceous-brown.

New Hebrides, *Cuming*. 1 specimen. B.M.

Allied to the preceding species.

Sub-genus Anchacantha.

Abdomen irregularly and transversely oblong irregular; with six strong spines, all directed backwards, the two at the anterior lateral angles the shortest, those at the posterior lateral angles the longest, but those at the posterior angles nearly as long, so that the posterior outline of the abdomen exhibits three deep sinuations.

Type, *A. curvispina*.

14. G. curvispina.

Epeira curvispina, Guérin, Icon. Règne anim. Arachn. pl. 2, fig. 8 (1829—44).

Plectana curvispina, Walckenaer, Apt. 2, p. 154, n. 5 (1837).

Ashanti. B.M.

15. G. retracta, n. sp. Pl. IV. fig. 12.

Female; length of abdomen $1\frac{3}{4}$ line; breadth at widest part, excluding spines, $2\frac{1}{2}$ lines; entire length $2\frac{1}{4}$ lines; anterior lateral spines $\frac{1}{2}$ a line, posterior 1 line; of posterior margin $\frac{2}{3}$ of a line.

Cephalothorax normal; abdomen subovate, with eight obtuse angles; six acute spines, two from anterior lateral margins, very short, subconical, directed laterally; two from posterior lateral angles, directed obliquely backwards; two from posterior margin subparallel.

Cephalothorax, falces, maxillæ and legs castaneous; labium dirty testaceous; sternum pitchy; abdomen above testaceous, with four central and nineteen submarginal impressed spots of the same colour; spines castaneous, rugose, and pilose; ventral surface dull brown, spotted with yellow, transversely wrinkled, and rugose between the spots; conical projection pitchy.

Old Calabar, *Dalton*. 1 specimen. B.M.

Allied to *G. curvispina*, but very distinct.

16. G. vaccula.

Gasteracantha vaccula, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 301, n. 1 (1859, edit. 1860); Eng. Resa, Zool. Arachn. 1, p. 12 (1868).

Sp. ead. ? Sierra Leone (Sherboro Island), *Salmon*. B.M.

If I have rightly identified this species, it is allied to *G. curvispina;* the description of the spines on the abdomen is so vague in the original diagnosis, the number of them even not being mentioned, that it is impossible to determine the species with certainty.

Sub-genus GASTERACANTHA, Simon.

17. G. ornata.

Gasteracantha ornata, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 302, n. 7 (1859, edit. 1860); Eng. Resa, Zool. Arachn. p. 16 (1868).

"Caffraria" (*Wahlberg*), *Thorell*.

Seems allied to *G. ensifera;* the central lateral spines are, however, directed backwards and upwards.

18. G. falcicornis, n. sp. Pl. IV. fig. 10.

Female; length of abdomen $3\frac{1}{4}$ lines; breadth at widest part, excluding spines, $6\frac{1}{2}$ lines; entire length 4 lines; posterior lateral spines about $5\frac{1}{2}$ lines, anterior 1 line; of posterior margin $\frac{3}{4}$ of a line.

Cephalothorax normal; abdomen transversely suboval, with six angles, from which the spines spring; two on anterior lateral margin, short, horizontal, curving slightly backwards; two on posterior lateral margin, about seven times as long, robust, strongly curved backwards and upwards; and two, short on posterior margin, horizontal and nearly parallel.

Cephalothorax, falces and femora of legs castaneous, pilose; maxillæ, labium, tibiæ, and tarsi of legs and sternum pitchy; abdomen testaceous, with four central and twenty marginal impressed red spots; spines reddish-castaneous, pilose; ventral surface brown, spotted with ochraceous, testaceous at the margins, with two or three impressed red spots; a black conical projection between spinnerets and epigyne.

S. Africa, *Rev. Ch. Livingstone*. 1 specimen. B.M.

Seems allied to *G. ornata* of Thorell.

19. G. Thorellii.

Gasteracantha Thorellii, Keyserling, Sitzungsber.

der Isis zu Dresden, p. 67; pl. 1, fig. 4 (1863, edit. 1864).

" Nossi-bé," *Keyserling.*

20. G. unguicornis, n. sp. Pl. IV. fig. 13.

Female; length of abdomen $3\frac{1}{4}$ lines; breadth at widest part, excluding spines, 8 lines; entire length 4 lines; posterior lateral spines 3 lines, anterior $\frac{1}{2}$ a line; of posterior margin $\frac{1}{2}$ a line.

Cephalothorax normal; abdomen same form as in *G. fornicata*, with six angles from which the spines spring; two on anterior lateral margins acute, very short, directed obliquely forwards; two on posterior lateral margins, six times as long, very robust, rather obtuse, distinctly curved backwards and downwards; and two very short and obtuse on posterior margin, parallel, and directed slightly upwards.

Cephalothorax, falces, maxillæ and sternum pitchy, pilose; labium dark testaceous; legs brown; abdomen rugose, olivaceous-brown, with four central and nineteen marginal impressed castaneous spots; spines pitchy, rugose and pilose; ventral surface rugose, dark olivaceous-brown, with dark castaneous submarginal impressed spots; a well-developed, black, conical projection between spinnerets and epigyne.

" India or China." 1 specimen. B.M.

Seems allied to *G. Thorellii.*

21. G. consanguinea, n. sp.

Female; length of abdomen $3\frac{1}{4}$ lines; breadth at widest part, excluding spines, 8 lines; entire length $4\frac{1}{4}$ lines; posterior lateral spines 2 lines, anterior $\frac{1}{3}$ of a line; of posterior margin $\frac{1}{2}$ a line.

Excepting in the spines, same colours and characters as *G. unguicornis;* lateral spines shorter, posterior lateral spines less curved backwards, and almost horizontal.

China, *J. C. Bowring.* 1 specimen. B. M.

22. G. milvoides, n. sp. Pl. IV. fig. 2.

Female; length of abdomen 3 lines; breadth at widest part, excluding spines, $6\frac{1}{4}$ lines; entire length — ?; posterior lateral spines 4 lines, anterior $\frac{1}{2}$ a line; of posterior margin $\frac{2}{3}$ of a line.

Cephalothorax wanting; abdomen nearly same form as in *G. fornicata*, with six angles from which the spines spring; all the spines acute; two on anterior lateral mar-

gin very short, directed slightly forwards; two on posterior lateral margin eight times as long, robust, directed slightly backwards and upwards; and two short on posterior margin, divergent, and nearly horizontal.

Cephalothorax wanting; abdomen above reddish-olivaceous, delicately rugose and pilose, with four central and nineteen marginal impressed castaneous spots; spines dark castaneous, pilose; ventral surface rugose and pilose, reddish-olivaceous, becoming blackish in the centre, transversely wrinkled, and coarsely punctured, with impressed castaneous spots at bases of lateral spines; a black conical projection above spinnerets.

S. Africa, *Rev. Ch. Livingstone.* B.M.

23. G. ensifera.

Gasteracantha ensifera, Thorell, Öfver's. Vetensk. Akad. Förhandl. xvi. p. 302, n. 6 (1859, edit. 1860); Eng. Resa, Zool. Arachn. p. 16 (1868).

Sp. ead.? S. Africa, *Rev. C. Livingstone.* B.M.

Our specimen consists simply of an abdomen, therefore I am unable to be certain of its identity with that described by Dr. Thorell.

24. G. dicallina, n. sp. Pl. IV. fig. 1.

Female; length of abdomen $3\frac{1}{2}$ lines; breadth at widest part, excluding spines, 7 lines; entire length — ?; posterior lateral spines $2\frac{3}{4}$ lines, anterior 1 line; of posterior margin 2 lines.

Cephalothorax wanting; abdomen same general form as *G. formosa*, with six angles from which the spines spring; two on anterior lateral margin short, acute, directed laterally, with a very slight inclination forwards; two on posterior lateral margin nearly three times as long, obtuse, but with small terminal tooth, directed laterally, and curving backwards; and two rather long on posterior margin, parallel, and directed obliquely upwards.

Cephalothorax wanting; abdomen smooth, with minutely serrated margin, orange crossed through the centre by two irregular, waved, dark red bars, and posteriorly by a slender interrupted black line, connecting impressed spots; four central and twenty-one marginal impressed red spots; spines red, rugose and pilose; ventral surface coarsely granulose, black, spotted with orange, spines red; impressed spots at base of spines dark red; usual black conical projection.

Pachebon, Siam, *Stevens*. B.M.
Remarkable for the length of the posterior spines.

25. G. formosa.
Gasteracantha formosa, Vinson, Aran. de la Réunion, p. 315, n. 62 ; pl. 9, fig. 7, var. (1863).
Madagascar, *Ida Pfeiffer*. B.M.

26. G. nana, n. sp. Pl. IV. fig. 4.
Female ; length of abdomen 2 lines, breadth at widest part, excluding spines, 3 lines ; entire length $2\frac{1}{2}$ lines ; posterior lateral spines $1\frac{1}{4}$ line, anterior $\frac{1}{4}$ of a line ; of posterior margin $\frac{2}{3}$ of a line.
Cephalothorax normal ; abdomen form of *G. formosa*, with six angles bearing the spines ; two on anterior lateral margin acute, very short, directed obliquely forwards ; two on posterior lateral margin five times as long, acute, directed slightly backwards ; and two short, acute, divergent, on posterior margin.
Cephalothorax, falces, maxillæ, labium, sternum and legs ochraceous ; abdomen smooth, testaceous, with four central and eighteen marginal impressed castaneous spots ; spines castaneous, rugose, pilose ; ventral surface black, spotted with testaceous in the centre, but testaceous round the margins, and exhibiting impressed spots at base of lateral spines ; black conical projection as usual.
Congo. 1 specimen. B.M.

27. G. versicolor.
Plectana versicolor, Walckenaer, Apt. 2, p. 161, n. 18 (1837).
" Caffraria," *Walckenaer ;* Sp. cad.? Pt. Natal, *Stevens*. B.M.

28. G. violenta.
♀ *Gasteracantha violenta*, Koch, Arachn. Austral. 1, p. 5, n. 5 ; pl. 1, fig. 3 (1871).
" New Guinea," *Koch ;* Australia, Port Macquarie, Falkland Isles. B.M.
Our dried examples of this species are much broken, and show no trace of the dark bands mentioned in Koch's description ; in form they agree well with his figure ; but the large depressed spots of the second series seem rather continuous with the first than the third series, as in *G. tæniata*.

29. G. tæniata.

Plectana tæniata, Walckenaer, Apt. 2, p. 169, n. 29 (1837); Koch, Arachn. Austral. 1, p. 10, n. 10 (1871).

Dorey, *Wallace*. B.M.

30. G. panisicca, n. sp. Pl. IV. fig. 14.

Female; length of abdomen $2\frac{1}{2}$ lines; breadth at widest part, excluding spines, $5\frac{1}{2}$ lines; entire length $3\frac{3}{4}$ lines; posterior lateral spines 1 line, anterior $\frac{1}{2}$ a line; of posterior margin 1 line.

Cephalothorax and abdomen as in *G. tæniata*, the latter with six angles from which the spines spring; two on anterior lateral margin acute, very short, directed slightly forwards; two on posterior lateral margin twice as long, obtuse, with terminal tooth, and two of equal length on posterior margin, acute and widely divergent.

Cephalothorax, falces and sternum black, pilose; labium pitchy, clouded with castaneous and clothed with testaceous hairs; maxillæ and legs pitchy, pilose; abdomen pale testaceous or whitey-brown, rugose, the margins speckled with black granules, with four central and eighteen marginal impressed black spots; spines black, rugose and pilose; ventral surface whitey-brown, speckled with black granules and with black impressed spots round the margin; usual black conical projection.

Philippines. 1 specimen. B.M.

Allied to *G. tæniata*.

31. G. Sturii.

Plectana Sturii, Doleschall, Natuurk. Tijd. Nederlandsch. Indië. xiii. p. 424 (1857); Acta Soc. Scient. Indo-Nederl. 5, pl. 8, fig. 1 (1859).

"Amboina," *Doleschall*; Ceram, *Ida Pfeiffer*. B.M.

Close to *G. tæniata*.

32. G. centrum.

Plectana centrum, Doleschall, Natuurk. Tijd. Nederlandsch. Indië. xiii. p. 425 (1857).

"Central Java," *Doleschall*.

33. G. Mauricia.

Plectana Mauricia, Walckenaer, Apt. 2, p. 155, n. 8 (1837).

Madagascar (near Antananarivo). B.M.

34. G. Lepida.

Gasteracantha Lepida, Cambridge, Proc. Zool. Soc. p. 821, pl. 50, fig. 2 (1870).

"Sinai" (*Lord*), *Cambridge.*

Most nearly allied to *G. Mauricia* of Walckenaer, also to *G. sanguinolenta* of Koch.

35. G. Madagascariensis.

Gasteracantha Madagascariensis, Vinson, Aran. de la Réunion, p. 315, n. 61; pl. 9, fig. 6 (1863).

"Madagascar," *Vinson.*

A striking black and white species of the typical subgenus.

36. G. vittata.

Gasteracantha vittata, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 301, n. 2 (1859, edit. 1860); Eug. Resa, Zool. Arachn. 1, p. 13 (1868); Koch, Arachn. Austral. 1, p. 2, n. 3, pl. 1, fig. 1 (1871).

Var. ? *Plectana acuminata,* Doleschall (nec Walckenaer), Acta Soc. Scient. Indo-Nederl. 5, pl. 16, fig. 1 (1859).

Java, *Melly.* B.M.

37. G. obliqua.

Gasteracantha obliqua, Koch, Arachn. 11, p. 64, pl. 375, fig. 884 (1845).

"Brazils," *Koch.*

Near *G. vittata;* we have an allied species from Brazil.

38. G. sexserrata.

Plectana sexserrata, Walckenaer, Apt. 2, p. 157, n. 11 (1837).

"Cayenne," *Walckenaer;* Sp. ead.? *Hab.*—? B.M.

39. G. irradiata.

Plectana irradiata, Walckenaer, Apt. 2, p. 170, n. 30 (1837).

"Cochin China," *Walckenaer;* Corea, *Adams.* B.M.

40. G. sanguinolenta.

Gasteracantha sanguinolenta, Koch, Arachn. 11, p. 51; pl. 373, fig. 875 (1845).

"Cape of Good Hope," *Koch;* Sp. ead.? Congo, *Curror.* B.M.

41. G. fornicata.

Gasteracantha fornicata, Fabricius, Syst. Ent. 2,

p. 417, n. 40; Koch, Arachn. 4, p. 18, pl. 113, fig. 261 (1837).

Gasteracantha transversa, Koch, Arachn. 4, p. 14, pl. 113, fig. 259 (1837).

Var. *Epeira Diadi*, Lucas, Dict. pitt. d'Hist. nat. 3, p. 70; pl. 149, fig. 4.

Ceylon and E. Indies; Java, *Melly*, *Ross*. B.M.

The type of *G. fornicata* is in the Banksian Collection.

42. G. nebulosa, n. sp.

Female; length of abdomen 3 lines; breadth at widest part, excluding spines, 7 lines; entire length 4 lines; posterior lateral spines $2\frac{1}{2}$ lines, anterior $\frac{2}{3}$ of a line; of posterior margin 1 line.

Cephalothorax as usual, but slightly more depressed behind the eyes; abdomen form of *G. fornicata*, with six angles bearing the spines; two on anterior lateral margins acute, short, directed obliquely forwards; two on posterior lateral margins nearly four times as long, robust, acute, curving slightly downwards and backwards, and two short, acute, nearly parallel, on posterior margin.

Cephalothorax and falces pitchy; maxillæ and legs dark castaneous-brown; labium and sternum ochraceous; abdomen dark castaneous, with anterior and posterior areas dirty testaceous, granulated with black; four ill-defined central and fourteen marginal impressed reddish-castaneous spots, ten on front and four in pairs on hind-margin, between the latter four coarse punctures; spines pitchy; those of posterior lateral margins glossed with steel blue; ventral surface brownish-testaceous, covered with shining brown granules, and with reddish impressed submarginal spots, transversely wrinkled behind; two shining castaneous spots at back of spinnerets; conical projection brown; spines as above.

Java, *Argent*. 1 specimen. B.M.

Possibly a variety of *G. fornicata*.

43. G. Sumatrana, n. sp. Pl. III. fig. 3.

Female; length of abdomen $3\frac{1}{2}$ lines; breadth at widest part, excluding spines, 8 lines; entire length $4\frac{1}{2}$ lines; posterior lateral spines $2\frac{1}{4}$ lines, anterior $\frac{1}{2}$ a line; of posterior margin 1 line.

Cephalothorax normal; abdomen same general form as *G. fornicata*, but broader and more prominent in front, with six angles bearing the spines, two on anterior lateral margins, very short, acute, directed obliquely forwards;

two on posterior lateral margins five times as long, robust, obtuse, with suddenly acuminate apex, nearly straight and horizontal; two on posterior margin, acute, nearly parallel, depressed.

Cephalothorax black, with castaneous anterior margin, clothed at the sides with short testaceous hairs; falces and maxillæ black; sternum and legs pitchy; labium pitchy, margined with castaneous; abdomen olivaceous-brown, delicately rugose at the margins, hind margin brownish-testaceous; spines pitchy, rugose; ventral surface brown, dirty testaceous behind, and irrorated with blackish granules; submarginal impressed spots black; conical projection brown.

Sumatra, *Sir Stamford Raffles.* B.M.

Nearly allied to *G. fornicata*, but certainly distinct.

44. G. varia.

Gasteracantha varia, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 301, n. 3 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 14 (1868).

Hab.—?

Seems to belong to the *G. fornicata* group.

45. G. frontata.

Gasteracantha frontata, Blackwall, Ann. & Mag. Nat. Hist. S. 3, vol. 14, p. 40 (1864).

"E. India," *Blackwall.*

Seems, from the description, very like a minute specimen of *G. fornicata.*

46. G. Hebridisia, n. sp.

Female; length of abdomen $2\frac{3}{4}$ lines; breadth at widest part, excluding spines, $6\frac{1}{2}$ lines; entire length $3\frac{1}{2}$ lines; posterior lateral spines $1\frac{1}{3}$ line, anterior $\frac{2}{3}$ of a line; of posterior margin 1 line.

Cephalothorax normal; abdomen transversely oblongo-ovate (nearly form of *G. Westringii*), with six angles bearing the spines; two on anterior lateral margin acute, short, directed slightly forwards; two on posterior lateral margin twice as long, robust, obtuse, with terminal tooth, directed slightly downwards and backwards; and two short, acute and divergent, on posterior margin.

Cephalothorax, falces, maxillæ, and legs, black, clothed with testaceous hairs; labium brown; abdomen smooth, ochraceous, with four central and seventeen marginal

reddish-pitchy impressed spots; spines purplish-black, rugose and pilose; ventral surface black, spotted with orange; central area bearing conical projection, castaneous.

Aneiteum, New Hebrides, *Cuming*. 1 specimen. B.M.

Somewhat intermediate in character between *G. tæniata* and *G. Westringii*, and remarkable for the unique colouring of the ventral surface of the abdomen.

47. G. albiventer, n. sp. Pl. IV. fig. 6.

Female; length of abdomen $1\frac{3}{4}$ line; breadth at widest part, excluding spines, $3\frac{1}{2}$ lines; posterior lateral spines 1 line, anterior $\frac{1}{2}$ a line; of posterior margin $\frac{2}{3}$ of a line.

Cephalothorax normal; abdomen transversely oblongo-ovate, with six angles bearing the spines; two on anterior lateral margins acute, short, directed obliquely forwards; two on posterior lateral margins twice as long, robust, suddenly pointed at apex, directed obliquely backwards with a slight curve; and two short, acute, nearly parallel, on posterior margin.

Cephalothorax, falces, maxillæ, labium and legs dark olivaceous; sternum testaceous; abdomen testaceous, with four central and nineteen marginal ferruginous impressed spots; spines ferruginous; ventral surface white speckled with black, with spines, impressed spots and conical projection, ferruginous.

Dorey, New Guinea, *Wallace*. 1 specimen. B.M.

Remarkable for the white colour of the ventral surface of the abdomen: it is allied to *G. Hebridisia*.

48. G. Westringii.

Gasteracantha Westringii, Keyserling, Sitzungsber. der Isis zu Dresden, p. 66, pl. 1, fig. 2 (1863, edit. 1864); Koch, Arachn. Austral. 1, p. 3, n. 4; pl. 1, fig. 2 (1871).

Australia, *Koch*; "Georgia"! B.M.

Koch says that this species bears a great resemblance to *G. fornicata* and *G. transversa:* our locality is probably wrong, as we have a nearly allied species from the Isle of Pines (not Atlantic).

49. G. mollusca.

Gasteracantha mollusca, Koch, Arachn. Austral. 1, p. 7, n. 6; pl. 1, fig. 4 (1871).

"New Caledonia," *Koch*.

Allied to *G. irradiata* of Walckenaer.

50. G. Hecate.

Plectana Hecate, Walckenaer, Apt. 2, p. 168, n. 28 (1837); Petiver, Gazoph. pl. 26, fig. 5.

"Luzon," *Walckenaer;* Philippines. B.M.

The front and hind pairs of spines are very short in our example.

51. G. falcifera.

Gasteracantha falcifera, Koch, Arachn. 11, p. 62; pl. 375, n. 883 (1845).

Manilla, *Koch;* Philippines. B.M.

52. G. Bleekeri.

Plectana Bleekeri, Doleschall, Natuurk. Tijd. Nederlandsch. Indië. xiii. p. 423 (1857).

"Amboina," *Doleschall.*

Seems allied to *G. falcifera;* according to Doleschall it is allied to *G. Linnæi* of Walckenaer.

Sub-genus Atelacantha, *Simon.*

53. G. Mengii.

Gasteracantha Mengii, Keyserling, Sitzungsber. der Isis zu Dresden, p. 67, pl. 1, fig. 5 (1863, edit. 1864).

Atelacantha Malagensis, Simon, Hist. Nat. des Araign. p. 285, fig. 130 (1864).

"Malacca," *Keyserling;* Singapore, *Wallace.* B.M.

Sub-genus Callocantha, *Simon.*

54. G. geminata.

Aranea geminata, Fabricius, Suppl. Ent. Syst. p. 292, nos. 38, 39.

Gasteracantha geminata, Koch, Arachn. 4, p. 18, pl. 113, fig. 260 (1837).

Madras, *Jerdon;* Ceylon, *Thwaites.* B.M.

55. G. Servillii.

Epeire de Serville, Guérin, Enc. Méth. 10, p. 763.

Plectana Servillii, Walckenaer, Apt. p. 159, n. 15 (1837).

Brazil.

According to Walckenaer, it resembles *G. geminata*, but is a broader species, and different.

56. G. transversalis.

Plectana transversalis, Walckenaer, Apt. 2, p. 165, n. 22 (1837).

"Timor," *Walckenaer*.
Allied to *G. geminata*.

57. G. connata, n. sp.

Female; length of abdomen two lines; breadth at widest part, excluding spines, $3\frac{1}{2}$ lines; entire length $2\frac{3}{4}$ lines; anterior lateral spines $1\frac{1}{4}$ line, posterior $1\frac{1}{3}$ line; of posterior margin 1 line.

Cephalothorax nearly normal, but flattened and indistinctly transversely depressed behind eyes; abdomen same general form as *G. geminata*, but narrower, more prominent in front, and with lateral spines bending slightly forwards (more than in any examples of *G. geminata* in the collection); slightly divergent at their tips; spines of posterior margin acute, slightly divergent.

Cephalothorax and falces pitchy, labium and sternum ochraceous; maxillæ and legs pitchy, banded with ochraceous; abdomen above ochraceous, crossed transversely by two bands of black, with four central and sixteen submarginal impressed spots, three on either side behind, the others in front; spines castaneous, varied with black, slightly rugose and very pilose: ventral surface black, spotted with ochraceous; bases of femora of legs testaceous; basal half of spines castaneous, apical half black; conical projection black.

Old Calabar, *Gray*. 1 specimen. B.M.
Nearly allied to *G. geminata*.

Sub-genus TETRACANTHA, *Simon*.

58. G. tetracantha.

Aranea tetracantha, Linnæus, Syst. Nat. 1, pt. 2, p. 1037, n. 43.

Plectana Linnæi, Walckenaer, Apt. 2, p. 163, n. 20 (1837).

Gasteracantha quadridens, Koch, Arachn. 11, p. 59, pl. 374, fig. 880 (1845).

Var. *Gasteracantha pallida*, Koch, l. c. p. 60, pl. 374, fig. 881 (1845).

"Caffraria and Isle of St. Thomas, coast of Africa," *Walckenaer*; "Isle of St. Thomas, West Indies!" Koch. B.M.

59. G. inversa.

Plectana inversa, Walckenaer, Apt. 2, p. 164, n. 21 (1837).

"Caffraria" (*Delalande*), *Walckenaer*.
Allied to *G. tetracantha*.

60. G. mœsta.
Gasteracantha mœsta, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 301, n. 4 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 14 (1868).
" St. Barthelemy," *Thorell.*
Seems allied to *G. quadridens* of Koch (*tetracantha*, L.).

61. G. hilaria.
Gasteracantha hilaria, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 302, n. 5 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 15 (1868).
" St. Barthelemy," *Thorell.*
Also allied to *G. tetracantha.*

Sub-genus Isacantha, Simon.

62. G. annulipes.
Gasteracantha annulipes, Koch, Arachn. 11, p. 52, pl. 373, fig. 876 (1845).
Manilla, *Koch;* Philippines. B.M.

63. G. picea.
Gasteracantha picea, Koch, Arachn. 11, p. 61, pl. 375, fig. 882 (1844).
Epeira hexacantha, Walckenaer (nec Fabr.), Tabl. des Aran. p. 66, n. 57; Apt. 2, p. 152, n. 4 (1837).
Haiti, *Tweedie;* Venezuela, *Dyson.* B.M.

64. G. rubiginosa.
Gasteracantha rubiginosa, Koch, Arachn. 11, p. 55, pl. 374, fig. 878 (1845).
Haiti, *Tweedie.* B.M.

65. G. atlantica.
Plectana atlantica, Walckenaer, Apt. 2, p. 167, n. 26 (1837).
Haiti.
Near *G. rubiginosa*, Koch, but whitish above.

66. G. Kochii.
Gasteracantha hexacantha, Koch, Arachn. 4, pl. 117, fig. 268 (1837).
Brazil; Pará, *Grahame.* B.M.

67. G. quinqueserrata.
Plectana quinqueserrata, Walckenaer, Apt. 2, p. 157, n. 12 (1837).
Colombia, *Goudot.* B.M.

68. G. insulana.

Gastcracantha insulana, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 302, n. 8 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 17 (1868).

"Gallapagos Islands" (*Kinberg*), *Thorell.*

69. G. hexacantha.

Aranea hexacantha, Fabricius, Ent. Syst. 2, p. 417, n. 39.

Gasteracantha velitaris, Koch, Arachn. 4, p. 33, pl. 117, fig. 269 (1837).

S. America. B.M.

The type of this species is in the Banksian Collection.

70. G. Hassellii.

Gasteracantha Hassellii, Koch, Arachn. 4, p. 29, pl. 117, fig. 267 (1837).

"Java," *Koch.* ——? B.M.

71. G. Kuhlii.

Gasteracantha Kuhlii, Koch, Arachn. 4, p. 10, pl. 114, fig. 262 (1837).

Plectana acuminata, Walckenaer, Apt. 2, p. 159, n. 16 (1837).

Siam (Pachebon), *Stevens.* B.M.

Walckenaer quotes the *G. Kuhlii* of Koch as his *G. acuminata*; the species figured by Doleschall cannot, therefore, be the species intended by Walckenaer.

72. G. cuspidata.

Gasteracantha cuspidata, Koch, Arachn. 4, p. 22, pl. 114, fig. 264 (1837).

"Java," *Koch.*

73. G. mucronata.

Gasteracantha mucronata, Walckenaer, Apt. 2, p. 156, n. 10 (1837).

Caffraria.

74. G. Leucomelas.

Plectana Leucomelas, Doleschall, Acta Soc. Scient. Indo-Nederl. 5, p. 42, n. 4, pl. 11, fig. 8 (1859).

"Java," *Doleschall.*

Allied to *G. Kuhlii*, but white above, with black spots and spines.

75. G. parvula.
Gasteracantha parvula, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 303, n. 13 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 21 (1868).
"Singapore" (*Kinberg*), *Thorell.*

76. G. tabulata.
Gasteracantha tabulata, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 303, n. 15 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 23 (1868).
Pt. Natal, *Gueinzius.* B.M.

77. G. modesta.
Gasteracantha modesta, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 304, n. 16 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 24 (1868).
"Caffraria" (*Wahlberg*), Thorell.
Seems allied to *G. tabulata.*

78. G. cicatricosa.
Gasteracantha cicatricosa, Koch. Arachn. 11, p. 54, pl. 373, fig. 877 (1845).
"Cape of Good Hope," *Koch;* S. Africa, *Argent.* B.M.

79. G. alba.
Gasteracantha alba, Vinson, Aran. de la Réunion, p. 315, n. 60 (1863).
"Réunion," *Vinson.*
It is impossible even to guess at the affinities of this species from the diagnosis, as M. Vinson only describes its colours. M. Simon, however, refers it to *Isacantha.*

80. G. cancriformis.
Aranea cancriformis, Linnæus, Syst. Nat. 11, p. 1037, n. 46.
Epeira cancriformis, Walckenaer, Hist. nat. des Aran. Fasc. 3, fig. 4.
Gasteracantha cancriformis, Koch, Arachn. 4, pl. 114, fig. 263 (1837).
Plectana cancriformis, Walckenaer, Apt. 2, p. 151 (1837).
Aranea conchata, Schabber, Phys. Belust. 4, Nurnb. p. 1, pl. 1 (1781).
Georgia. B.M.

81. G. elipsoides.

Plectana elipsoides, Walckenaer, Apt. 2, p. 155, n. 7 (1837); Abbot's Georg. Spid. fig. 118.

Georgia. B.M.

82. G. sacerdotalis.

♀ *Gasteracantha sacerdotalis*, Koch, Arachn. Austral. 5, p. 198; pl. 18, fig. 1 (1872).

"Bowen," *Koch*.

Allied to *G. flavomaculata*.

83. G. prætextata.

Plectana prætextata, Walckenaer, Apt. 2, p. 166, n. 25 (1837).

Gasteracantha prætextata, Koch, Arachn. Austral. p. 8, n. 7 (1871).

Australia, *Damel;* Moreton Bay, *Gibbons*. B.M.

There seems to be much confusion respecting this species; I believe it to be a collection of tolerably well-marked forms, including *G. minax*, *flavomaculata*, &c., which may perhaps be varieties of one species; Koch says that he formerly believed it to be a Javanese form (Arachn. Austral. 1, p. 8), and Doleschall identifies it with a species which I believe to be the *G. helva* of Blackwall.

84. G. minax.

Gasteracantha minax, Thorell, Öfvers, Vetensk. Akad. Förhandl. xvi. p. 303, n. 12 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 21 (1868); Koch, Arachn. Austral. 1, p. 10, n. 11 (1871).

Australia, *Bynce*. B.M.

Probably a variety of *G. prætextata*.

85. G. lugubris.

♀ *Gasteracantha lugubris*, Koch, Arach. Austral. 1, p. 12, n. 13; pl. 1, fig. 8 (1871).

"Sydney," Koch, Sp. cad. ?? Australia (Sydney). B.M.

We have one shrivelled example of what may be this species; it is allied to *G. minax* of Thorell, but differs much in colouring.

86. G. flavomaculata.

Gasteracantha flavomaculata, Keyserling, Verh. Zool.-botan. Gesellsch. in Wien, xv. p. 801, pl. 19, figs. 8, 9 (1865).

"Sydney," *Keyserling;* Goulburn River, *Parry;* Moreton Bay, *Gibbons*. B.M.

This form seems scarcely distinct from *G. prætextata;* it is, however, rather larger, paler in colour, and the lateral spines in our dried specimens are more divergent. Compare Petiver Gazoph. 1, pl. 26, fig. 6 (1711).

87. G. astrigera.
♀ *Gasteracantha astrigera*, Koch, Arachn. Austral. 1, p. 14, n. 14, pl. 1, fig. 9 (1871).
"Sydney," *Koch.*
Allied to *G. flavomaculata.*

88. G. lygeana.
Plectana lygeana, Walckenaer, Apt. 2, p. 197, n. 73 (1837-39).
"Java, Sumatra," *Walckenaer;* Sp. ead.? Java, *Argent.* B.M.

Sub-genus Stanneoclavis.

Allied to *Isacantha*, but all the spines resembling mammæ, or inverted broad-headed nails.
Type, *S. pentagona.*

89. G. pentagona.
Plectana pentagona, Walckenaer, Apt. 2, p. 168, n. 27 (1837); Koch, Arachn. Austral. 1, p. 9, n. 9; pl. 1, fig. 6 (1871).
"New Ireland," *Walckenaer;* "Georgia!" B.M.

90. G. variegata.
Plectana variegata, Walckenaer, Apt. 2, p. 160, n. 17 (1837); Koch, Arachn. Austral. 1, p. 2, n. 1, Gasteracantha v. (1871).
Dorey, *Wallace.* B.M.

91. G. tuberosa.
Gasteracantha tuberosa, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 303, n. 14 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 22 (1868).
"Caffraria" (*Wahlberg*), *Thorell.*
Appears to belong to the *G. variegata* group.

92. G. Canningensis.
Gasteracantha (*Isacantha*) *Canningensis*, Stoliczka, Journ. Asiat. Soc. Bengal, xxxviii. p. 248; pl. xviii, fig. 1 (1869).
"S. of Port Canning (S.E. of Calcutta)," *Stoliczka.*
Hab.— ? B.M.

93. G. suminata.

♀ *Gasteracantha suminata*, Koch, Arachn. Austral. 1, p. 11, n. 12; pl. 1, fig. 7 (1871).

"Viti-Levu," *Koch*.

94. G. borbonica.

Gasteracantha borbonica, Vinson, Aran. de la Réunion, p. 314, n. 59; pl. 9, fig. 5 (1863).

"Réunion," *Vinson*.

Allied to *G. Canningensis*.

95. G. mammeata.

Gasteracantha mammeata, Thorell, Öfvers, Vetensk. Akad. Förhandl. xvi. p. 302, n. 9 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 18 (1868). ?*Plectana brevispina*, Doleschall, Natuurk. Tijd. Nederlandsch. Indië. xiii. p. 423 (1857).

"Manilla," *Thorell;* "Amboina," *Doleschall;* Philippines. B.M.

If the above prove to be identical, the name *G. brevispina* will take precedence.

96. G. roseolimbata.

Plectana roseolimbata, Doleschall, Acta. Soc. Scient. Indo-Nederl. 5, p. 43, n. 6; pl. 13, fig. 1 (1859).

Java. B.M.

Very close to *G. mammeata* of Thorell.

97. G. mammosa.

Gasteracantha mammosa, Koch, Arachn. 11, p. 57; pl. 374, fig. 879 (1845).

"Brazils," *Koch;* Ceylon, *Thwaites;* Madras, *Jerdon*. B.M.

98. G. flavida.

Plectana flavida, Doleschall, Acta Soc. Scient. Indo-Nederl. 5, p. 43, n. 5; pl. 13, fig. 3 (1859).

"Java," *Doleschall*.

Seems scarcely to differ from *G. mammosa* of Koch.

99. G. mediofusca.

Plectana mediofusca, Doleschall, Acta. Soc Scient. Indo-Nederl. 5, p. 44, n. 7; pl. 13, fig. 9 (1859).

"Java," *Doleschall*.

Closely allied to *G. mammosa* and *G. flavida*.

100. G. guttata.

Gasteracantha guttata, Thorell, Öfvers. Vetensk. Akad. Förhandl. xvi. p. 302, n. 10 (1859, edit. 1860); Eug. Resa, Zool. Arachn. p. 19 (1868).

"Malacca" (*Kinberg*), *Thorell.*

Seems to belong to the *G. mammosa* group.

Sub-genus Tricantha, *Simon.*

101. G. tricuspidata.

Plectana tricuspidata, Blackwall, Ann. and Mag. Nat. Hist. S. 3, vol. 11, p. 38 (1863); *Tricantha tricornis*, Simon, Hist. Nat. des Araign. p. 293, fig. 136 (1864).

"Rio Janeiro," *Blackwall*; Venezuela, *Birschell.* B.M.

A very remarkable little species.

Sub-genus Dicantha.

102. G. lata.

Epeira lata, Walckenaer, Tableau des Aran. p. 66, n. 61; Apt. 2, p. 165, n. 23 (1837).

"Guadeloupe," *Walckenaer.*

A curious species with only two spines on the abdomen.

103. G. tetraedra.

Plectana tetraedra, Walckenaer, Apt. 2, p. 166, n. 24 (1837.

Hab.—?

Sub-genus Aranœthra.

Abdomen corneous, semicircular, entirely surrounded by subconical spines or teeth more or less prominent, about twenty-six in number; six central and twenty-three submarginal impressed spots, the latter at regular intervals, with the exception of two on each side forming pairs opposite the ninth to tenth tooth from anterior median sinus; cephalothorax much expanded in the centre, and crossed by three prominent rounded tubercles; falces rather short for the genus. Type, *A. Cambridgii.*

104. G. Cambridgii, n. sp. Pl. IV. fig. 8.

Female; length of abdomen 7 lines; breadth at widest part, excluding spines, 1 inch; entire length 8 lines; general length of spines 1 line.

Cephalothorax described above; eyes of central prominence, almost equidistant; abdomen semicircular, sinuate behind cephalothorax, with three central large depressions

(possibly due to its siccate condition); fourteen to fifteen more or less prominent subconical teeth on front margin, depressed over cephalothorax, and twelve, more robust, at equal distances round outer margin, strongly depressed and obtusely acuminate.

Cephalothorax above dark castaneous, with anterior margin black; falces black, terminal claw castaneous; labium, sternum, maxillæ and legs shining black; abdomen fulvous, varied with pale olivaceous in front; the impressed spots deeper or lighter fulvous, with brown centres; spines or teeth dark castaneous at base, but becoming black, varied with testaceous, towards apex; ventral surface black, irregularly clouded here and there with testaceous patches; two series of impressed submarginal spots along front, and one round outer margin.

Fernand Vas River, West Africa, *Du Chaillu*. 1 specimen. B.M.

I feel great pleasure in naming this truly remarkable species after my friend the Rev. O. P. Cambridge, to whom I am much indebted for assistance received since I took up the study of Apterous Insects; it resembles very remarkably the crustacean genus *Œthra* (near to *Cryptopodia*). Mr. Pickard Cambridge tells me that he possesses two fine examples, and that there are several others in the University Museum at Oxford, all from Africa; its nearest ally, so far as I can judge from the figure, is the *Gasteracantha Gayi* of Nicolet.

I had some thoughts of separating this as a genus from *Gasteracantha;* it however differs little more than several of M. Simon's sub-genera; I have, therefore, retained it in the genus, merely distinguishing it as M. Simon has done with other forms by a sub-generic name.

The following species are unknown to me, and may, perhaps, not belong to this genus:—

105. G. sector.

Aranea sector, Forskael, Deser. anim. p. 85; pl. 25, fig. C (1775).

Asia, Arabia.

106. G. spissa.

Gasteracantha spissa, Nicolet, Gay's Chili, 4, p. 475, n. 4 (1849).

Chili.

Described as follows—"thorax brown, pale yellow in front; abdomen transversely parallelogram-shaped, multispinose; legs pale yellow, annulated with black."

107. G. flava.

Gasteracantha flava, Nicolet, Gay's Chili, 4, p. 476, n. 5 (1849).

Chili.

Allied to *G. spissa;* differs in colour, the legs not being annulated, and the under surface of the body being roughened.

108. G. variabilis.

Gasteracantha variabilis, Nicolet, Gay's Chili, 4, p. 476, n. 7 (1849).

Chili.

Described as—"blackish; abdomen quadrispinose at the sides, above bispinose, longitudinally carinated; legs brown, annulated with black."

109. G. pallida.

Gasteracantha pallida, Nicolet, Gay's Chili, 4, p. 476, n. 6 (1849).

Chili.

This species has the abdomen whitish, with eight spines, a dorsal brown spot; legs orange-yellow, annulated with brown.

110. G. fumosa.

Gasteracantha fumosa, Nicolet, Gay's Chili, 4, p. 477, n. 8 (1849).

Chili.

111. G. mastoidea.

♀ *Gasteracantha mastoidea*, Koch, Arachn. Austral. 5, p. 201, pl. 18, fig. 2 (1872).

"Viti Levu," *Koch.*

Almost like a *Cyrtarachne* in general form.

The following are also possibly not *Gasteracanthæ:*—

112. G.? tricolor.

Plectana tricolor, Doleschall, Acta Soc. Scient. Indo-Nederl. 5, p. 44, n. 8, fig. 3 (1859).

"Amboina," *Doleschall.*

A triangularly rounded species without spines on abdomen; seems almost to agree with *Cœrostris* of Thorell, so far as I can judge from the figure.

113. G.? Gayi.

Gasteracantha Gayi, Nicolet, Gay's Chili, 4, p. 473, n. 1; pl. 5, fig. 4 (1849).

"Valdivia," *Gervais.*

114. G.? umbrosa.
Gasteracantha umbrosa, Nicolet, Gay's Chili, 4, p. 474, n. 2 (1849).
"Valdivia," *Gervais*.
Allied to the preceding.

115. G.? pennata.
Gasteracantha pennata, Nicolet, Gay's Chili, 4, p. 474, n. 3, pl. 5, fig. 5 (1849).
"Santiago," *Gervais*.
A very remarkable form, with long broad curved lateral wings to the abdomen.

The following species have been referred to the genus *Cyrtarachne*:—

Genus CYRTARACHNE, *Thorell*.

1. C. Grubii.
Cyrtogaster Grubii, Keyserling, Sitzungsber. der Isis zu Dresden, p. 81, pl. 1, fig. 3 (1863, edit. 1864).
"Mauritius?" *Keyserling*.

2. C. bispinosa.
Cyrtogaster bispinosa, Keyserling. Verh. Zool.-botan. Gesellsch. in Wien, 15, p. 802; pl. 19, figs. 10, 11 (1865); Koch, Arachn. Austral. 1, p. 16, n. 1 (1871).
"Sidney," *Keyserling*; Australia. B.M.

3. C.? dubia.
Plectana dubia, Walckenaer, Apt. 2, p. 198, n. 75 (1837-39).
"Cochin China," *Walckenaer*.
Appears to be a *Cyrtarachne* from the description.

4. C. violaceata.
Gasteracantha violaceata, Nicolet, Gay's Chili, 4, p. 479, n. 11 (1849).
Chili.

5. C. porcellanæ.
Gasteracantha porcellanæ, Nicolet, Gay's Chili, 4, p. 480, n. 12 (1849).
Chili.

6. C. ventrosa.
Gasteracantha ventrosa, Nicolet, Gay's Chili, 4, p. 481, n. 15 (1849).
Chili.

7. C. scitula.
   Gasteracantha scitula, Nicolet, Gay's Chili, 4, p. 481, n. 16 (1849).
   Chili.

8. C. maculata.
   Gasteracantha maculata, Nicolet, Gay's Chili, 4, p. 480, n. 13 (1849).
   Chili.

9. C. venusta.
   Gasteracantha venusta, Nicolet, Gay's Chili, 4, p. 480, n. 14 (1849).
   Chili.

10. C. inflata.
    Gasteracantha inflata, Nicolet, Gay's Chili, 4, p. 482, n. 17 (1849).
    Chili.

11. C.? columnata.
    Gasteracantha columnata, Nicolet, Gay's Chili, 4, p. 482, n. 18 (1849).
    Chili.
    This species, according to Gervais, has the posterior tubercle prolonged, vertical, cylindrical and swollen at its extremity, resembling a little column; Koch figures a species of *Tholia* (*T. turrigera*) with this character.

12. C. punctata.
    Gasteracantha punctata, Nicolet, Gay's Chili, 4, p. 483, n. 19 (1849).
    Chili.

13. C. minuta.
    Gasteracantha minuta, Nicolet, Gay's Chili, 4, p. 483, n. 20 (1849).
    Chili.

14. C. scutula.
    Gasteracantha scutula, Nicolet, Gay's Chili, 4, p. 478, n. 9, pl. 5, fig. 6 (1849).
    Chili.

15. C. caduceator.
    Gasteracantha caduceator, Nicolet, Gay's Chili, 4, p. 479, n. 10 (1849).
    Chili.

Same size as the preceding; abdomen scutelliform, tuberculate.

16. C. tuberculiformis.
Peltosoma tuberculiformis, Simon, Mém. Liege (1870).
Corsica, Simon.

17. C. ixiodes.
Peltosoma ixiodes, Simon, Mém. Liege (1870).
Corsica, Simon.

18. C. rubicunda.
♀ *Cyrtarachne rubicunda*, Koch, Arachn. Austral. 1, p. 18, n. 3 (1871).
"Sydney," *Koch.*
C. excavata, Koch (Beschr. neuer Arachn. und Myriap. in Verhandl. Zool.-botan. Gesellsch. Wien, 1867, p. 175), is referred by Mr. Cambridge to his new genus *Thlaosoma*; *Gasteracantha turrigera*, Koch, l. c. p. 173, is referred by Koch to his new genus *Tholia* (Arachn. Austral. 1, p. 22, n. 3; pl. 2, fig. 3); the latter genus appears to me closer to *Epeira* than *Gasteracantha.*

19. C. verrucosa.
♀ *Cyrtarachne verrucosa*, Koch, Arachn. Austral. 1, p. 16, n. 2; pl. 2, fig. 1 (1871).
"Upolu," *Koch.* Sydney or Moreton Bay, *Damel.* B.M.

Thorell (Eur. Spiders, pt. 1) believes that *Epeira paradoxa* of Lucas belongs to this genus.
The *Gasteracantha hemisphærica* of Koch appears to be referable to Thorell's genus *Cœrostris.*

Explanation of Plate IV.

1. G. dicallina . . . . page 160	9. G. scintillans . . . page 156
2. G. milvoides . . . „ 159	10. G. falcicornis . . . „ 158
3. G. Sumatrana . . . „ 164	11. G. nigrisparsa . . . „ 154
4. G. nana . . . . . „ 161	12. G. retracta . . . „ 157
5. G. remifera . . . . „ 154	13. G. unguicornis . . „ 159
6. G. albiventer . . . „ 166	14. G. panisicca . . . „ 162
7. G. regalis . . . . „ 156	15. G. sororna . . . . „ 155
8. G. Cambridgii . . . „ 175	

All the species, excepting *G. Cambridgii*, enlarged.

VIII. *Descriptions of* Aculeate Hymenoptera *of Japan, collected by* Mr. George Lewis *at Nagasaki and Hiogo.* By Frederick Smith.

[Read 17th February, 1873.]

This collection is specially interesting, not only on account of its being the first, of any extent, that has been investigated and described, but also from the amount of interesting addition which it makes to the knowledge of geographical distribution of genera and species. The collection contained several additional species of *Andrenidæ*, but as the whole were sent in spirit, these pubescent insects were not in a condition desirable for description, the hair being matted together, and the original brightness of the colour evidently destroyed.

I received eighty species of *Aculeata;* of these, fifty-two I believe to be undescribed; the others, twenty-eight in number, are well-known species, described from specimens obtained from North China, India, Borneo, and islands in the Indian and Australian regions of the Archipelago. Only three insects are identical with species found in Europe, and two with species of North America.

On a future occasion I hope to publish descriptions of a number of *Tenthredinidæ* and *Ichneumonidæ*, and also some very interesting species of *Formicidæ*, received at the same time as the *Aculeata*.

The following list comprises the genera and the number of species of each described in the present paper:—

Mutilla	4	species	Trypoxylon	1	species	Osmia	1	species
Tiphia	5	„	Cerceris	1	„	Megachile	2	„
Scolia	5	„	Eumenes	2	„	Lithurgus	1	„
Pompilus	9	„	Rhynchium	2	„	Nomada	2	„
Priocnemis	3	„	Odynerus	2	„	Cœlioxys	1	„
Agenia	1	„	Vespa	5	„	Stelis	1	„
Ammophila	1	„	Polybia	1	„	Crocisa	1	„
Pelopæus	3	„	Polistes	3	„	Eucera	1	„
Sphex	1	„	Prosopis	2	„	Anthophora	1	„
Ampulex	1	„	Sphecodes	1	„	Xylocopa	1	„
Larrada	5	„	Halictus	5	„	Bombus	3	„
Bembex	1	„	Nomia	1	„	Apis	1	„

HETEROGYNA.

MUTILLIDÆ.

Genus Mutilla, Linn.

1. *Mutilla pustulata.*

Male. Length 5 lines. Black, with the two basal segments of the abdomen red. The head and thorax coarsely punctured, and having a thin, erect, black pubescence; that on the legs is cinereous; on each side of the face, below the insertion of the antennæ, is a line of snow-white pubescence; the wings fusco-hyaline, darkest towards their apex; the metathorax covered with large deep punctures. The apical margins of the third and fourth segments fringed with white pubescence.

Hab.—Hiogo.

2. *Mutilla insidiator.*

Female. Length $3\frac{1}{3}$ lines. Head and abdomen black, thorax red. Head shagreened; thorax oblong and very strongly and closely punctured, the margin crenulated; the legs covered with fine, short, cinereous pubescence; the spines at the apex of the tibiæ white, and the apical joints of the tarsi obscure fusco-ferruginous. The abdomen covered with fine short black pubescence; a transverse spot of silvery-white pubescence on each side of the second segment placed rather forwards before the middle, a broad band of the same on the third segment, the fifth segment has a similar coloured fringe on its apical margin.

Hab.—Hiogo.

3. *Mutilla ardescens.*

Female. Length 3 lines. Head and abdomen black, thorax and legs red. Head shagreened; tips of the mandibles, and the antennæ, ferruginous; the latter fuscous above, towards the apex. Thorax oblong, the sides nearly parallel, crenulated, and rugose-punctate; tips of the femora fuscous. Abdomen very closely and finely punctured. A small patch of pale golden pubescence in the middle of the basal segment, a band of the same on the apical margin of the second segment, and the apical segment covered with similar pubescence.

Hab.—Nagasaki.

4. *Mutilla pungens.*

Female. Length 4 lines. Head and abdomen black, the thorax red. Head very closely punctured, the man-

dibles obscurely rufo-piceous. Thorax oblong-quadrate, the sides nearly parallel; the anterior margin more or less black; the sides of the thorax crenulate; the apical joints of the tarsi ferruginous. Abdomen with a thin, black pubescence, a golden spot at the base; the second segment with a fascia of similar coloured pubescence; the apical segment ferruginous; all the segments are fringed beneath with pale pubescence.

Hab.—Hiogo.

FOSSORES.

SCOLIIDÆ.

Genus Tiphia, Fabr.

1. *Tiphia fuscipennis.*

Female. Length 6 lines. Jet black and shining; the anterior wings brown. The head evenly but not closely punctured; the antennæ stout, and of an opaque black. The prothorax and disk of the mesothorax with a few strong punctures, the posterior margin of the former rufo-piceous; the upper surface of the metathorax with three central elevated parallel lines extending from the base to the verge of the truncation; the latter opaque and pubescent; the sides of the metathorax obliquely striated; the legs with a glittering white pubescence, which is most dense on the tibiæ and tarsi; the spines at the apex of the tibiæ and tarsal joints pale testaceous. Abdomen punctured, the first and second segments finely and distantly so; the other segments more strongly and closely punctured; the apical margin of the terminal segment rufo-piceous.

Hab.—Hiogo.

2. *Tiphia punctata.*

Male. Length 4 lines. Jet black and shining; the anterior wings slightly fuscous, the posterior pair subhyaline. The head, prothorax and mesothorax rather strongly punctured; most closely so on the face; the antennæ opaque; the metathorax rugose, with three central subparallel elevated lines, which extend from the base to the apex of the truncation; the latter opaque and rugose. Abdomen: the basal segment with strong, deep, distant punctures; the second segment with fine distant punctures; those on the following segments closer and stronger.

Readily distinguished by the puncturing of the basal segment of the abdomen.

Hab.—Hiogo.

3. *Tiphia rufo-mandibulata.*

Female. Length $3\frac{3}{4}$ lines. Jet black and shining; the anterior wings fusco-hyaline, the posterior pair paler, the mandibles ferruginous. The head, prothorax and mesothorax, punctured; the superior surface of the metathorax with three longitudinal elevated lines, widest apart at the base; all extending to the verge of the truncation, the latter opaque and pubescent; the sides of the metathorax obliquely striated; the tegulæ ferruginous; the spines at the apex of the tibiæ and of the joints of the tarsi, pale rufo-testaceous. The abdomen with delicate distant punctures, most close on the four apical segments; the terminal segment ferruginous at the apex.

Hab.—Hiogo.

4. *Tiphia ordinaria.*

Male. Length $3\frac{3}{4}$ lines. Jet black, shining and pubescent; the head, prothorax and mesothorax evenly, but not very closely, punctured; the metathorax with three elevated central raised lines, the outer ones converging towards the verge of the truncation; the latter opaque and pubescent; the sides of the metathorax obliquely striated; the wings subhyaline; the tibial and tarsal spines pale testaceous; abdomen finely punctured, the two basal segments distantly so; the pubescence white and glittering and most dense towards the apex.

Hab.—Hiogo.

5. *Tiphia agilis.*

Male. Length 3 lines. Jet black, shining and finely punctured. The clypeus with silvery pubescence, the mandibles ferruginous, their base and apex black; the antennæ fusco-ferruginous beneath, the scape black. The wings fusco-hyaline, the stigma black, the tegulæ rufo-piceous; the superior surface of the metathorax with three central parallel raised lines; the anterior and intermediate tibiæ and tarsi, pale rufo-testaceous; the extreme apex of the femora rufo-piceous. The abdomen pubescent towards the apex.

Hab.—Hiogo.

Genus Scolia, Fabr.

Div. (*Dielis*), Sauss.

Anterior wings with two submarginal cells and two recurrent nervures.

1. *Scolia annulata.*

Tiphia annulata, Fabr. Ent. Syst. ii. 225. *Scolia 4-fasciata*, Burm. Scol. 25, 27 ♀ only. *Scolia annulata*, Smith, Cat. Hym. Ins. iii. 100, 72. *Dielis annulata*, Sauss. and Sichel, Cat. Scol. 196, 210.

Hab.—India, Java, Phil. Isl. (Manilla), Celebes, China, Japan (Hiogo and Nagasaki).

2. *Scolia grossa.*

Tiphia grossa, Fabr. Syst. Piez. 232. *Scolia grossa*, Burm. Scol. 23, 22; Smith, Cat. Hym. Ins. iii. 99, 70. *Dielis grossa*, Sauss. and Sichel, Cat. Scol. 199, 215. *Elis sericea*, Mél. Hym. 63, 31, ♂.

Hab.—India, Java, Borneo, Sumatra, Aru, Japan (Hiogo and Nagasaki).

Div. (*Discolia*), Sauss.

Anterior wings with two submarginal cells and one recurrent nervure.

3. *Scolia fascinatus.*

Male. Length 8 lines. Black, the abdomen splendidly iridescent, with blue, violet, and coppery brilliancy. The head and thorax closely and strongly punctured, the clypeus rugose. Thorax shining; the metathorax with two small patches of cinereous pubescence at its base; the wings fuscous, and having a coppery iridescence, the anterior pair darkest along the costal margin; the second segment has a small lunate orange spot in the middle of its outer margin.

Hab.—Hiogo.

4. *Scolia japonica.*

Female. Length 9 lines. Black, shining and punctured; the first, and three following segments of the abdomen, with a large yellow macula on each side.

The head strongly punctured, the clypeus longitudinally rugose; the mandibles rufescent at their apex; the face thinly covered with pale fulvous hair. Thorax strongly punctured; the prothorax with a yellow line on each side, and being, as well as the metathorax, thinly covered with short pale fulvous pubescence; the wings fulvo-hyaline, the nervures ferruginous. Abdomen: the first segment has an oblong spot on each side, the second has a similar spot, which is hook-shaped at its inner extremity; the

third and fourth has a semicircular spot, the latter spots almost unite at their extremities within.

Male. Of the same length as the female; the head entirely black; a lateral line on the prothorax, and the scutellum and post-scutellum, yellow; wings as in the other sex. Abdomen: the first and second segments have an oblong spot on each side; the four following segments have a yellow band on their apical margin; that on the third segment is broad and slightly narrowed in the middle; the three following bands are each narrower in succession; beneath, immaculate.

Hab.—Hiogo.

5. *Scolia ventralis.*

Male. Length 7 lines. Black, shining, and with a bright iridescence on the abdomen, which is banded with yellow; thinly covered with hoary pubescence. The head entirely black; the posterior margin of the prothorax with a yellow line on each side; the wings fulvo-hyaline, the nervures fusco-ferruginous. Abdomen: the first and three following segments with a yellow fascia on their apical margins; the fasciæ are notched in the middle, and on each side are more or less emarginate; those on the first and second segments are subinterrupted in the middle. Beneath, the second, third, and fourth segments have on each side a minute, oblong, yellow spot.

Hab.—Hiogo.

POMPILIDÆ.

Genus Pompilus, Fabr.

1. *Pompilus fragilis.*

Male. Length 3 lines. Black, shining and impunctate. The face, below the insertion of the antennæ, covered with silvery pubescence; the palpi pale testaceous. The posterior margin of the prothorax angular; the metathorax, sides of the thorax, beneath, and the legs, covered with a fine silky silvery pile; the wings hyaline, but with a fuscous cloud beyond the stigma; the nervures black. Abdomen subpetiolate, the basal margins of the segments covered with silky silvery pile.

Hab.—Hiogo.

2. *Pompilus maculifrons.*

Male. Length 6 lines. Black, smooth, slightly shining, and variegated with white lines and spots; the

wings subhyaline, with a dark cloud at their apical margins beyond the third submarginal cell. Head: a narrow line behind the eyes, a broader one at their inner margin on the face, not extending to their vertex; a bilobed spot between the antennæ, a triangular one on each side of the clypeus, and the mandibles, white, the latter ferruginous at their apex; the palpi pale ferruginous; the scape white in front, and the flagellum fulvous beneath. The anterior coxæ with a white spot at their apex; the tibiæ, tarsi and femora ferruginous in front, the latter black towards the base; the tibiæ with a white line outside; the intermediate and posterior femora ferruginous within; the posterior tibiæ pale at their base; all the calcaria pale; the intermediate and posterior femora ferruginous towards their apex; the posterior margin of the prothorax white, and a minute white spot on the mesothorax before the scutellum; the metathorax with a thin clothing of griseous pubescence. An interrupted white line at the basal margin of the second, third and fourth segments.

Hab.—Hakodadi.

3. *Pompilus arrogans.*

Female. Length 6½ lines. Black, the abdomen maculated with white. Head: an abbreviated narrow white line at the inner and outer orbits of the eyes; the anterior margin of the clypeus rounded. Thorax: the posterior margin of the prothorax rounded, and with a slightly interrupted white fascia; the wings subhyaline, and with a dark fuscous cloud at their apical margins beyond the third submarginal cell; the metathorax smooth and shining; a minute white spot at the base of the posterior tibiæ. Abdomen: a white elongate spot at the basal margin of the second and third segments laterally, the spots pointed within; all the tibiæ and tarsi spinose.

Hab.—Hiogo.

4. *Pompilus consanguineus.*

Female. Length 6⅓ lines. Black, smooth, and shining; the mandibles ferruginous towards their apex, with the tips black; the posterior margin of the prothorax angulated; wings fuscous, with a dark cloud at their apex; legs spinose; the sides of the abdomen thinly covered with whitish pile.

This species exactly resembles large examples of the European *P. niger* which I have received from Dumfries, and, like them, it has the third submarginal cell much less

contracted towards the marginal; in all other respects it exactly corresponds with British specimens of *P. niger*.

Hab.—Hiogo.

5. *Pompilus bilunatus.*

Male. Length 8⅓ lines. Black, with the wings fuscous, and two pale yellow, lunate, spots at the base of the third segment of the abdomen. Head: the anterior margin of the clypeus truncate; the mandibles ferruginous towards their apex, with the tips black; the flagellum incrassate, tapering to a point at the apex, and fulvous beneath; a very narrow yellow line behind the eyes, and a broader one at the inner orbits of the eyes, narrowest towards the clypeus. The posterior margin of the prothorax slightly angulated; the metathorax truncate, the truncation subrugose; the legs have the spines, spurs, and claws black; the entire insect has a changeable fulvous pile, observable only in certain lights.

Hab.—Hakodadi.

6. *Pompilus atrox.*

Pompilus atrox, Dahlb. Hym. Europ. i. 63; Cresson, Trans. Amer. Ent. Soc. i. 98, 31, ♂ ♀.

Hab.—Hakodadi, Hiogo, N. America.

7. *Pompilus exortivus.*

Female. Length 11—12-½ lines. Head and thorax yellow, abdomen black. Head reddish-yellow; antennæ paler; the clypeus rounded at the sides, truncate in front; the mandibles black at their tips. Thorax: reddish-yellow; the prothorax paler; the mesothorax with a lateral, and an abbreviated central ferruginous stripe; the metathorax with a little yellow pubescence, and a transverse convex margin at its apex; the wings fulvo-flavous, with a narrowish, dark, defined, apical border; the coxæ, trochanters and basal portion of the femora black; the knees, tibiæ and tarsi reddish-yellow; the apical joint of the anterior tarsi, and the three apical joints of the other pairs, black. The basal margin of the second segment of the abdomen more or less yellow, the apical segment also yellow.

Hab.—Hiogo, Hakodadi, India, and North China.

8. *Pompilus Erebus.*

Female. Length 5½ lines. Black, with hyaline wings bordered with dark fuscous at their apical margins, the nervures black. Head: a narrow pale line behind the

eyes towards their summit, a similar abbreviated line at the inner orbits of the eyes, opposite the insertion of the antennæ; the anterior margin of the clypeus rounded, the edge narrowly recurved and shining. The posterior margin of the prothorax curved, and with a narrow interrupted pale line; the spines and calcaria black.

Var.—A white subovate spot on each side of the second segment, at its basal margin.

Hab.—Hiogo.

9. *Pompilus reflexus.*

Female. Length 4 lines. Black, with the base of the abdomen red. Head and thorax smooth and shining; the mandibles ferruginous at their apex; the anterior margin of the clypeus widely truncate, the angles of the truncation rounded; the posterior margin of the prothorax curved; the metathorax with a central longitudinal slightly impressed line; wings subhyaline, with a fuscous cloud at their apical margins. Abdomen: the base of the first segment black; the remainder, as well as the second segment, red; the entire insect smooth and shining.

Hab.—Hiogo.

Genus Priocnemis, Schiödte.

1. *Priocnemis irritabilis.*

Female. Length $7\frac{1}{4}$ lines. Black; wings hyaline, with a fuscous fascia. Head and thorax semi-opaque; the clypeus truncate anteriorly; the mandibles prominent, stout, and bidentate. The posterior margin of the prothorax angular; the nervures of the wings black; a fuscous fascia occupies the marginal cell, and crosses the anterior wings nearly to the bottom of the third discoidal cell. The abdomen smooth and shining, the apical segment having a little ferruginous pubescence at its apex.

Hab.—Hiogo.

2. *Priocnemis Atropos.*

Female. Length $3\frac{3}{4}$. Black, head and thorax semi-opaque, abdomen shining, wings with a broad fuscous fascia. Head: the clypeus widely emarginate, and, as well as the antennæ, having a changeable cinereous pile; the posterior margin of the prothorax subangular; the wings hyaline, with a fuscous fascia occupying the marginal cell, and crossing the wing nearly to the bottom of the third discoidal cell: a narrower fascia

crosses the wing at the apex of the externo-medial cell; the posterior tibiæ strongly serrated externally. Abdomen very smooth and shining, with the apex slightly ferruginous.

Hab.—Hiogo.

This species very closely resembles the *P. variegatus* of Europe.

3. *Priocnemis dorsalis.*

Calicurgus dorsalis, St. Farg. Hym. iii. 407; Smith, Cat. Mutill. and Pomp. p. 146.

Hab.—Hakodadi, Hiogo, India.

Genus Agenia, Schiödte.

1. *Agenia constructor.*

Female. Length 4 lines. Black; wings hyaline, with a dark fascia crossing the anterior pair at the marginal cell. Head: the clypeus with the anterior margin truncate; the palpi testaceous, the tips of the mandibles ferruginous; the apical joints of the antennæ fulvous beneath. The posterior margin of the prothorax subangulate; the metathorax transversely and finely rugose; the legs without spines; the calcaria black. Abdomen petiolated, smooth and shining; the entire insect with a fine griseous changeable pile, which is brightest on the coxæ and metathorax.

The male is smaller, has a broad white line on each side of the face running a little above the insertion of the antennæ; the anterior and intermediate coxæ are pale beneath, and the femora and tibiæ are pale fulvous beneath; the posterior legs black; the abdomen petiolated, and having the apical segment white; the insect covered with a fine cinereous pile.

Hab.—Hakodadi.

Although the wings have not a fascia, yet their neuration agrees with that of the female, and the general habit warrants my considering it the male of this species.

SPHEGIDÆ.

Genus Ammophila, Kirby.

1. *Ammophila infesta.*

Female. Length 10—11 lines. Black, with the apex of the petiole, and the first segment, red. Head shining, and with a few shallow punctures; the clypeus has a slight short fulvous pubescence, and is sprinkled with

longer black hairs. The mesothorax with scattered punctures and a deep longitudinal central channel; the scutellum irregularly longitudinally striated; the metathorax with a transverse rugose striation above, the sides covered with short griseous pubescence; the wings subhyaline, the nervures nigro-piceous. The abdomen with a blue tinge in certain lights; the legs covered with hoary pile.

Male. This sex is more pubescent, and has the clypeus and sides of the face densely covered with silvery pile: the mesothorax is transversely coarsely rugulose; the petiole, and a line down the first segment of the abdomen, black.

Hab.—Hiogo.

Genus Pelopæus, Latr.

1. *Pelopæus Madraspatanus*, Fabr. Syst. Piez. 203; Dahlb. Hym. Europ. i. 22.

Hab.—Hiogo, Hakodadi, India, Celebes.

2. *Pelopæus Bengalensis*, Dahlb. Hym. Eur. i. 433.

Hab.—Hakodadi, Hiogo, China, Phil. Islands, Celebes, Borneo, Timor, India.

3. *Pelopæus deformis*, Smith, Cat. Sphegidæ, &c. 231.

Hab.—Hakodadi, Shanghai.

Genus Sphex, Fabr.

1. *Sphex argentata*, Dahlb. Hym. Eur. i. 25. *Sphex argentifrons*, St. Farg. Hym. iii. 337.

Hab.—Hakodadi, Hiogo, India and Islands of the Archipelago, Africa and N. America.

Genus Ampulex, Sauss.

1. *Ampulex novaræ*, Sauss. Voy. Novar. Hymenop. p. 44, ♂.

Hab.—Hakodadi, Hongkong.

The female is coloured like the male, being entirely violaceous, with the posterior femora ferruginous; the head, viewed above, is quadrate; the clypeus smooth, and acutely carinate, terminating in three prominent teeth at its apex; it is shining and sparingly punctured, with the mandibles ferruginous at their apex. The prothorax smooth, compressed, with a longitudinal channel above, where it is slightly transversely strigose; the mesothorax

sparingly punctured on the disk, having two deeply impressed longitudinal lines; the metathorax transversely striated, and having one central, and on each side four longitudinal carinæ; the two nearest the central one, running obliquely inwards; a minute tooth at each of the posterior angles. The abdomen petiolate, elongate and compressed; acute at its apex. Wings hyaline, the nervures black.

LARRIDÆ.

Genus LARRADA, Smith.

1. *Larrada docilis.*

Female. Length 6 lines. Black, slightly shining, wings subhyaline. Head: the vertex with a single ocellus placed in a smooth depression, above which are two small tubercles; the clypeus covered with silvery pile. Thorax: the prothorax and mesothorax impunctate; the metathorax abruptly truncate, and finely transversely strigose above; the tegulæ rufo-piceous; the wings fulvo-hyaline; the nervures ferruginous. Abdomen: the three basal segments have a glittering silvery pile on their apical margins, only observable in certain lights; the apical segment opaque, and ferruginous at its apex. The legs and sides of the thorax have a fine glittering cinereous pile.

Male. This sex only differs in having the mandibles and the scape in front pale ferruginous; the anterior tibiæ and all the tarsi, rufo-piceous.

Hab.—Hiogo, Hakodadi.

2. *Larrada nigricans.*

Female. Length $3\frac{1}{4}$ lines. Black, wings subhyaline, the nervures black. Head finely shagreened, the face with silvery pubescence; the mandibles ferruginous towards their apex, with the tips black. Thorax shagreened, with the metathorax rugulose; the legs with fine cinereous pile, which is very bright and dense on the posterior tibiæ within; it is also very bright on the tarsi. Abdomen smooth and shining, with silvery fasciæ on the posterior margins of the segments, observable only in certain lights.

The male does not differ in any material respect from the female.

Hab.—Nagasaki.

3. *Larrada Tisiphone.*

Female. Length 6 lines. Black, the wings flavo-

hyaline; the nervures testaceous as well as the posterior margin of the tegulæ. Head opaque, with a fine silvery pubescence on the face; the cheeks have also a silvery pubescence. The thorax opaque, with the mesothorax only slightly shining and impunctate, depressed anteriorly and with two impressed lines extending to the disk; the metathorax transversely striated above; the sides of the truncation also striated in the same manner; the legs shining, and with a changeable silvery pile; the posterior tibiæ with some bright fulvous pubescent pile at their apex within. Abdomen smooth and shining, with changeable silvery fasciæ on the apical margins of the segments, only observable in certain lights; the apical segment opaque, except at its basal margin.

Hab.—Nagasaki.

4. *Larrada amplipennis.*

Male. Length 6 lines. Black, with the two basal segments of the abdomen red. Head wider than the thorax; the face covered with silvery-white pubescence, mandibles shining and obscurely ferruginous at their tips. Thorax opaque, finely and very closely punctured; wings fuscous, the posterior pair hyaline at their base; the tegulæ obscurely testaceous; the nervures dark brown; the metathorax with a thin cinereous pubescence. Abdomen slightly shining and thinly covered with cinereous pubescence, observable in certain lights, as are also the bright silvery fasciæ on the apical margins of the segments.

Hab.—Hiogo.

5. *Larrada Erebus.*

Female. Length 6½ lines. Black, the wings subhyaline, the nervures dark fuscous. The head shining; a single ocellus situated in a deep frontal irregular depression; the scape robust and compressed; the anterior margin of the clypeus broadly angular; the mandibles dark ferruginous and fringed with ferruginous hairs; the cheeks with a thin cinereous pubescence. Thorax: opaque, and closely and finely punctured; the metathorax abruptly truncate and finely rugulose; transversely so above; the legs with a fine cinereous pile; the apical joint of the tarsi testaceous; the claws pale. Abdomen shining and impunctate.

Hab.—Hiogo.

BEMBICIDÆ.

Genus Bembex, Fabr.

1. *Bembex Niponica.*

Male. Length 8½—9½ lines. Mesothorax black above; abdomen livid yellow, banded and spotted with black. Head yellow, with the vertex black, the black terminating on the face in a bifurcate shape, the forks continued down to the insertion of each antenna; black behind, with a yellow line running down to the base of the mandibles, their tips black; scape of the antennæ yellow in front, and the flagellum yellowish beneath. Thorax: a narrow line on the prothorax, a line over the tegulæ and passing along the apical margin of the scutellum; another across the post-scutellum, and a curved line from the insertion of the posterior wings, which extends to the verge of the truncation of the metathorax, the lateral margins of which are also yellow; the legs yellow; the coxæ black above, and sometimes a black line behind the posterior femora; wings hyaline, with ferruginous nervures. Abdomen livid yellow; the truncation of the base black, sometimes forming two black lobate shapes at the upper margin, at other times these lobes cross the segment and unite with a black fascia on the apical margin of the first segment; a black fascia at the base of the second segment, varying in width; the second segment with a black spot on each side, which unites occasionally with the black fascia; the apical margins of the following segments black; beneath, a large bilobate black shape on each segment; the second segment with a prominent tubercle, more or less developed in various specimens.

Hab.—Hiogo.

CRABRONIDÆ.

Genus Trypoxylon, Latr.

1. *Trypoxylon obsonator.*

Female. Length 7 lines. Black, with the apex of the petiole, and two following segments of the abdomen, red. Head: the face and sinus of the eyes covered with bright silvery pubescence; the flagellum fulvous beneath; the mandibles ferruginous. Thorax smooth and shining; the metathorax with a longitudinal channel, which widens into a broad excavation towards the apex; the sides of the thorax, and also beneath, with long, thin, silvery-white

pubescence; the anterior tibiæ and the base of the intermediate and posterior pairs, and the anterior and intermediate tarsi, pale testaceous; the wings hyaline and iridescent; the tegulæ testaceous; the abdomen with a fine cinereous pile, observable in certain lights.

Male. Length 5 lines. Differs in having the antennæ entirely black, and the abdomen less red at the base.

Hab.—Hiogo.

PHILANTHIDÆ.

Genus Cerceris, Latr.

1. *Cerceris navitatis.*

Female. Length $5\frac{1}{4}$ lines. Black, with the legs ferruginous, variegated with yellow markings. The head, thorax and abdomen closely, evenly, and strongly punctured; with a triangular shape at the base of the metathorax, smooth and shining. Head: a broad oblong-quadrate spot on each side of the face; a minute one behind the eyes, and the base of the mandibles, yellow. Thorax: a minute spot on each side of the collar, and the tegulæ yellow; the wings subhyaline, with their apical portion clouded. The apical margins of the second, third and two following segments with a narrow yellow fascia; all more or less attenuated in the middle, one or more usually interrupted; abdomen smooth and shining beneath with the apical margins of the segments coarsely punctured.

Hab.—Hakodadi.

DIPLOPTERA.

EUMENIDÆ, Westw.

Genus Eumenes, Fabr.

1. *Eumenes fraterna.*

Female. Length 6 lines. Extremely like the *E. coarctata* of Europe. Black, with the clypeus longer than in "*coarctata*," notched at the apex, forming two teeth, a transverse yellow spot at the base; a minute yellow kite-shaped spot between the antennæ, which have their scape yellow in front. Thorax: the anterior margin of the prothorax narrowly yellow; a small, oblong spot beneath the wings; the margin of the tegulæ, the postscutellum, and a small ovate spot on each side of the

metathorax, yellow; the tibiæ, tarsi and apex of the femora reddish-yellow; wings subhyaline. Abdomen: the apical margin of the petiolated basal segment, the apical margin of the second segment, the middle of the margin of the two following segments, more or less yellow; a small transverse yellow spot on each side of the second segment.

Hab.—Hiogo.

This species closely resembles both *E. coarctata* and *E. punctata* of Saussure. It differs from the former in having the clypeus longer; in having the yellow bands on the abdomen narrow, and of the same width throughout; the abdomen is also much more strongly punctured. From the latter it is at once distinguished by the shorter and much wider petiolated segment of the abdomen.

2. *Eumenes Lewisii.*

Eumenes Lewisii, Sauss. Guêpes Sol. (MS.)

Hab.—Hiogo and Nagasaki.

Genus Rhynchium, Spin.

1. *Rhynchium ardens.*

Female. Length 6—8 lines. Black, spotted and banded with yellow. Head: the clypeus, scape in front, a minute spot between the antennæ, and another behind the eyes, yellow. Thorax: the prothorax above nearly to the base of the wings, a spot beneath them, the hinder margin of the tegulæ, a small curved line behind them, the scutellum and post-scutellum (except their basal margin) yellow; the tibiæ, tarsi and apical portion of the femora, reddish-yellow; the tegulæ fuscous; the wings fusco-hyaline. Abdomen: the posterior margins of the first, second and third segments above, yellow. The head and thorax very closely and strongly punctured; the abdomen shining and more finely punctured.

Hab.—Nagasaki.

This species closely resembles *R. flavo-punctatum* from N. China, and differs principally in having the clypeus longer, the basal segment of the abdomen shorter and broader, and its punctuation more close and finer.

2. *Rhynchium hæmorrhoidale*, Fabr. Ent. Syst. ii. 263.

Hab.—Hiogo, India, Borneo, Malacca, Singapore, Celebes, Ceram, New Guinea, Africa.

Genus Odynerus, Latr.

1. *Odynerus captivus.*

Female. Length 6 lines. Black, with three yellow bands on the abdomen. Head: a lunate yellow mark at the base of the clypeus, which is sparingly punctured and bidentate at its apex. Thorax: the mesothorax with two longitudinal impressed lines, which extend to the scutellum; there is also an abbreviated line over the tegulæ; the central division between the impressed lines strongly punctured; the lateral divisions very sparingly punctured; wings subhyaline, the nervures black; the scutellum and post-scutellum strongly punctured. Abdomen subpetiolate, much narrower than the second segment, and having a central impressed line; the first segment and the base of the second closely punctured, the rest of the abdomen smooth and shining; the apical margin of the first and second segments with a pale yellow fascia, the fourth with an abbreviated fascia.

Hab.—Hiogo.

This species belongs to Wesmael's genus *Symmorphus*.

2. *Odynerus Lewisii*, Sauss. Guêpes Sol. (MS.).

Hab.—Hiogo, Hakodadi.

VESPIDÆ.

Genus Vespa, Linn.

1. *Vespa mandarinia*, Smith, Trans. Ent. Soc. Lond. New Ser. ii. 38, tab. viii. fig. 1, ♀; Sauss. Mon. Guêpes Soc. 150.

Vespa japonica, Radaschkovski, Etudes Entom. Motsch. (1857), 40.

Hab.—Hakodadi, Hiogo, North China.

2. *Vespa ducalis*, Smith, Trans. Ent. Soc. Lond. New Ser. ii. 39, ♂, ♀, ☿; Sauss. Mon. Guêpes Soc. 151.

Hab.—Hiogo, Hong Kong, Shanghai.

3. *Vespa auraria*, Smith, Trans. Ent. Soc. Lond. New Ser. ii. 46, tab. viii. fig. 8; Sauss. Mon. Guêpes Soc. 147.

Vespa simillima, Smith, Entom. Month. Mag. iv. (1867-8), 280, ☿ var.

Hab.—Hakodadi, Hiogo, N. India.

4. *Vespa japonica*, Smith, Entom. Month. Mag. iv. 279, ♂.

Hab.—Hakodadi, Hiogo.

At the time that I described this species I was not aware that the name had been used by another Entomologist; but as the species to which, in the first instance, the name "*japonica*" was given, proves to be my own *V. mandarinia*, described five years previously, it is not necessary to alter the name. Since describing *V. japonica* ♂, I have received numerous workers, which are coloured similar to the male, but are rather smaller in size.

5. *Vespa Lewisii*, Sauss. Guêpes Soc. (MS.).

Genus Polybia, Sauss.

1. *Polybia orientalis*, Sauss. Mon. Guêpes Soc. 208, tab. xxvi. fig. 2.

Hab.—Hakodadi, Hiogo.

Genus Polistes, Latr.

1. *Polistes Chinensis*, Fabr. Syst. Piez. 270; Sauss. Mon. Guêpes Soc. 56, tab. vii. fig. 2; Voy. Novar. Hym. 19.

Hab. — Hakodadi, Hiogo, Shanghai, Hong Kong, Siberia.

This insect is not, in my opinion, specifically separable from *P. biglumis*, (*diadema*) of Europe.

2. *Polistes hebræus*, Fabr. Syst. Piez. 273; Sauss. Mon. Guêpes Soc. 53.

Hab. — Hakodadi, Hiogo, India, China, Mauritius, Persia.

The Japanese, and also the Chinese form of this species, differ greatly in colouration from any we have seen from India. The thorax is black beneath; the mesothorax black, with two longitudinal yellow lines; the metathorax is usually black, but occasionally has two yellow lines; the abdomen is black, and beautifully variegated with yellow spots and lines; but the palest coloured examples from Japan very closely resemble the darker ones from India.

3. *Polistes Novaræ*, Sauss. Reise Novar. Hym. p. 19, tab. i. figs. 13, 14, ♀.

Hab. — Hakodadi, Hiogo, Tellangchong (Nicobar Islands), Sambelong Island (Malacca Straits).

The specimens from Hiogo, and also those from Hakodadi, differ from the type of Saussure, and all the varieties he enumerates, in wanting the dark maculæ on the anterior wings; but that author considers them all specifically the same.

ANTHOPHILA.

ANDRENIDÆ.

Genus Prosopis, Fab.

1. *Prosopis floralis.*

Female. Length 3 lines. Black: head and thorax closely punctured; abdomen smooth and shining. Head: a triangular spot on each side of the face, and a longitudinal stripe down the clypeus, pale yellow; the flagellum ferruginous beneath. Thorax: a narrow line on the collar, the tubercles and a spot on the tegulæ in front, pale yellow; the anterior tibiæ in front, and the extreme base of the intermediate pair, ferruginous; the base of the posterior tibiæ pale yellow; wings hyaline, their nervures black. The apical margins of the segments of the abdomen narrowly testaceous.

The male is rather smaller; has the face white, as well as the lower half of the scape of the antennæ, which is short and dilated; the anterior tibiæ, the base of rest, and the tarsi, very pale yellow.

Hab.—Hiogo.

2. *Prosopis perforata.*

Female. Length 3 lines. Very like "*floralis*," but differing in having the head longer, the clypeus with the anterior margin pale, and without the central stripe; the collar with a pale interrupted fascia; the base of the metathorax coarsely rugose; the truncation abrupt, and with its margins somewhat raised; the extreme base of the anterior and intermediate tibiæ pale; one-third of the basal portion of the posterior tibiæ yellowish-white.

Hab.—Hakodadi.

Genus Sphecodes, Latr.

1. *Sphecodes simillimus.*

Female. Length $3\frac{1}{3}$ lines. In colouring as well as in puncturing this insect exactly corresponds with the

S. rufescens of Europe; the only difference observable is, that the antennæ appear to be proportionately longer and more slender.

Hab.—Hiogo.

I have two specimens for examination.

Genus Halictus, Latr.

1. *Halictus occidens.*

Female. Length $4\frac{2}{3}$ lines. Black: head and thorax opaque and closely punctured; abdomen delicately punctured, smooth and shining. Clypeus produced and truncate at the apex, which is fringed with ferruginous hairs; the face with a thin pale-fulvous pubescence. Thorax with a thin, sparse, fulvous pubescence; the post-scutellum with dense, short, fulvous pubescence; the tibiæ and tarsi covered with a glittering golden pubescence, particularly dense on the posterior tibiæ within; the tarsi obscure ferruginous; wings sub-hyaline; the tegulæ and costal nervure black, the rest of the nervures testaceous. The abdomen has the base of the second, third and fourth segments with a fascia of short whitish pubescence.

Hab.—Hiogo.

2. *Halictus scitulus.*

Female. Length $3\frac{1}{4}$ lines. Black: head and thorax closely punctured; the clypeus produced; the face covered with thin cinereous pubescence; that on the thorax above is pale fulvous, at the sides and beneath is paler; the wings clear hyaline, the nervures pale testaceous; the tarsi testaceous, and, as well as the tibiæ, covered with short, dense, pale-golden pubescence. Abdomen smooth and shining; the basal margins of the first, second and third segments with a dense fascia of short whitish pubescence; the apical segment with fulvous pubescence.

Hab.—Hakodadi.

3. *Halictus subopacus.*

Halictus subopacus, Smith, Cat. Hym. Ins. Andrenidæ and Apidæ, 61, 86.

Two females received from Hakodadi; not distinguishable from the *H. opacus* from N. China.

4. *Halictus tarsatus.*

Male. Length 2½ lines. The face covered with short white pubescence; the anterior margin of the clypeus and the mandibles pale testaceous; the flagellum fulvous beneath; head rounded, the clypeus scarcely produced. The tegulæ pale testaceous; legs rufo-testaceous, with all the tarsi, the anterior tibiæ, and extreme base of the intermediate and posterior pairs, pale yellow; wings hyaline and iridescent, the nervures testaceous. Abdomen smooth and shining, with the apical margins of the segments testaceous.

Hab.—Hiogo.

5. *Halictus ærarius.*

Male. Length 3 lines. Bright brass-coloured. The clypeus produced; its apical margin, the mandibles and the flagellum beneath, excepting the two apical joints, yellow. The legs yellow; the tegulæ testaceous; the wings hyaline, the nervures testaceous; the margins of the segments of the abdomen depressed, and thinly fringed with short pale hairs.

Hab.—Hiogo.

This species closely resembles *Halictus tumulorum* of Europe.

Genus Nomia, Latr.

1. *Nomia japonica.*

Length 7 lines. Black: punctured, the abdomen most finely so; the face with a griseous pubescence, on the vertex and thorax it is fulvous; that on the legs is also fulvous; the claw-joint of the tarsi ferruginous; the wings subhyaline, the nervures dark fuscous; a pale testaceous spot on the tegulæ. Abdomen: the apical margins of the segments are marginate and deeply depressed; the basal margins are also depressed, and have a fine, short, pale, downy pubescence; that on the apical segment is black; beneath, the colour is obscurely piceous, and the margins of the segments are fringed with pale hairs.

APIDÆ.

(Div. Dasygastræ.)

Genus Osmia, Panz.

1. *Osmia Taurus.*

Female. Length 5½ lines. Obscure æneous: the head with long fulvous pubescence, inclining to fuscous on the

vertex; the clypeus with two stout horns, which are obliquely truncate at their apex; the mandibles very stout, and terminated by a strong bifid tooth. The thorax and legs with long pale fulvous pubescence, that on the tarsi ferruginous; the claw-joints ferruginous; the wings fusco-hyaline. Abdomen very convex, with a thin fulvous pubescence, and densely clothed beneath with ferruginous pubescence.

Male. Rather smaller than the female; the face with white pubescence; the tarsi have the claw-joint ferruginous; the abdomen black, with the apical margins of the segments testaceous.

Hab.—Hiogo.

Genus Megachile, Latr.

1. *Apis disjuncta*, Fabr. Ent. Syst. ii. 328. *Anthophora disjuncta*, Fabr. Syst. Piez. 374. *Megachile disjuncta*, St. Farg. Hym. ii. 331.

Hab.—India, Mauritius, Hakodadi.

2. *Megachile monticola*, Smith, Cat. Hym. Ins. Apidæ, 179, ♀.

Hab.—N. China, Silhet, Hakodadi, Hiogo.

Genus Lithurgus, Latr.

1. *Lithurgus collaris.*

Male. Length $5\frac{3}{4}$ lines. Black: the face covered with cinereous pubescence. Thorax: the collar with cinereous pubescence; beneath it inclines to fulvous, on the disk it is short and black; the legs shining black, with the posterior femora incrassate; the tibiæ are also stout, and, as well as the first joint of the tarsi, are fringed with short black pubescence; wings slightly fuscous, their nervures black. Abdomen shining, flattened above, with the posterior margins of the segments narrowly fringed with short white pubescence, more or less interrupted in the middle; beneath with black pubescence, and the margins of the segments with a cinereous fringe.

Hab.—Hakodadi.

This species closely resembles *L. dentipes* of India, but that insect has the thorax of the female rugose anteriorly.

(Div. Cuculinæ.)

Genus Nomada, Fabr.

1. *Nomada japonica.*

Female. Length 5¼ lines. Head and thorax black and closely punctured; the clypeus, a spot above it, and the orbits of the eyes, very narrowly, reddish-yellow; a minute black spot on each side of the clypeus; the antennæ and legs ferruginous; the coxæ and femora with a black line above; the apex of the tibiæ yellow above; the collar (narrowly), the tegulæ and scutellum, ferruginous; the wings flavo-hyaline, their apical margins clouded, the nervures ferruginous. Abdomen: the base and the apical margins of the first and second segments black; the intermediate space of the first segment ferruginous; the second and following segments have a yellow transverse fascia, the margins of the segments being obscure ferruginous; the second segment has a dark triangular spot in the middle of its basal margin.

Hab.—Hiogo.

2. *Nomada fervens.*

Female. Length 4½ lines. Ferruginous: two lines on the clypeus; the face, with a space above the insertion of the antennæ, and the middle of the vertex, black; the antennæ more or less fuscous above towards the apex. The mesothorax with three elongate stripes and the metathorax black; two ferruginous spots on the inclosed space below the post-scutellum, and two lines of the same below the space; wings fusco-hyaline; a clear hyaline spot beyond the third submarginal cell. Abdomen: the base and the apical margins of the segments narrowly edged with black; a quadrate yellow spot on the apical segment.

Hab.—Hiogo.

Genus Cœlioxys, Latr.

1. *Cœlioxys fenestrata.*

Female. Length 7½ lines. Black: head and thorax coarsely rugose; the first, second and third segments of the abdomen evenly and rather strongly punctured; the two following segments very finely punctured at the base, and more strongly so towards their apical margins; the sixth segment elongated and acute, the inferior plate of the segment prolonged a little beyond the upper one; on

each side of the scutellum is a short tooth which is curved downwards. The face densely clothed with short bright fulvous pubescence; the wings dark fuscous, with their base hyaline. The apical margins of the segments of the abdomen are very narrowly fringed with white pubescence.

Hab.—Hakodadi, N. China.

Genus Stelis, Panz.

1. *Stelis abdominalis*, Smith, Proc. Linn. Soc. iv. 7, ♂.

Hab.—Hakodadi, Celebes, Java, Batchian.

Genus Crocisa.

1. *Nomada histrio*, Fabr. Ent. Syst. ii. 345. *Crocisa histrio*, Latr. Gen. Crust. et Ins. iv. 172.

Hab.—India, Algeria, Japan (Hiogo), Europe.

(Div. Scopulipedes.)

Genus Eucera, Scop.

1. *Eucera sociabilis.*

Female. Length 6 lines. Black: the thorax and base of the abdomen with long pale fulvous pubescence, that on the face is nearly white; the wings hyaline, with a faint cloud at their apical margins, the nervures fusco-ferruginous, the tegulæ testaceous; the tibiæ and tarsi have a fulvous pubescence; the basal joint of the intermediate and posterior pairs have ferruginous pubescence within; the spines at the apex of the tibiæ are pale testaceous; the tarsi ferruginous. Abdomen: the second, third and fourth segments have a broad fascia of fine white pubescence on their apical margins, the two first usually widely interrupted; the fascia on the fifth segment is fulvous.

Male 4 lines. The antennæ as long as the insect; the pubescence on the head and thorax paler than in the female, the tarsi ferruginous; abdomen without fasciæ, with the margins of the segments testaceous; the clypeus yellow.

Hab.—Hiogo, N. China, Siberia.

Genus Anthophora, Latr.

1. *Apis nidulans*, Fabr. Ent. Syst. ii. 330, and *Centris nidulans*, Syst. Piez. 357.

Anthophora nidulans, St. Farg. Hym. ii. 27.

This species has a very wide geographical range, and, although not yet found in this country, is common in

France, Italy, Albania, Tunis, Algeria, Madeira, Canary Islands.

The specimens from Japan I have carefully examined, and cannot separate them from *A. nidulans*.

Genus Xylocopa, Latr.

1. *Xylocopa circumvolans.*

Female. Length 10½ lines. Shining black: the head strongly punctured, most closely so on the face; the clypeus with a central smooth line down the middle; the face has, at the insertion of the antennæ, and at the anterior margin of the clypeus, some short black pubescence. The thorax clothed above with pale fulvous pubescence; on the sides, legs, and also beneath, it is black; wings dark brown, with blue and violet iridescence in certain lights. Abdomen punctured, most closely so towards its apex.

Male. The same size as the female, and clothed with pubescence of the same colour; the clypeus, a triangular spot above it, and the scape beneath, yellow; also a yellow spot at the base of the mandibles; the posterior tibiæ incrassate, and tuberculate beneath, eyes large and more approximating than in the female, but not very closely so.

Hab.—Hiogo.

(Div. Sociales.)

Genus Bombus, Fabr.

1. *Bombus speciosus.*

Female. Length 10 lines. Black: the face and the vertex clothed with yellow pubescence. The thorax clothed with yellow pubescence, and with a black band between the wings; the wings subhyaline, and having a fuscous cloud beyond the cells; the apical joints of the tarsi ferruginous, the claws black. Abdomen: the two basal segments clothed with yellow pubescence, the third with black, and the rest with bright ferruginous; beneath, the entire pubescence is yellow.

Hab.—Hiogo.

This species was taken at an elevation of 4,000 feet, but only a single specimen; it resembles *Bombus trifasciatus* from North China; which differs from it in having the head elongate, and its pubescence black; the abdomen beneath and the legs have also black pubescence.

2. *Bombus terminalis.*

Worker. Length 9 lines. Black: the head elongate and with black pubescence; that on the legs, on the body beneath, on the sides of the third segment of the abdomen above, and the fourth, fifth, and sixth also, black; the clypeus very shining and sparingly punctured; the apical joints of the tarsi ferruginous, the claws black.

Hab.—Hiogo.

Taken at an elevation of 4,000 feet; six specimens. I have supposed them to be workers; they may, however, prove to be females.

3. *Bombus ignitus.*

Female. Length 10 lines. Black, and clothed with black pubescence, except the three apical segments of the abdomen, which are covered with red hairs; the wings fusco-hyaline, darkest beyond the submarginal cells; the tarsi rufo-piceous, except the basal joint, and clothed beneath with ferruginous hair.

Hab.—Hakodadi.

Of this species I have only received one sex, the female; it is larger, but very like the *B. lapidarius* of Europe, but it most closely resembles *B. similis* of N. China; the latter species is still larger, and has dark-fuscous wings; probably the males of each, if compared, would offer good differential specific characters.

Genus Apis, Linn.

1. *Apis nigro-cincta*, Smith, Proc. Linn. Soc. v. 93, ♀.

The queen of this species, which I have received from Mr. Lewis, is smaller than that of *A. mellifica*, being about two-thirds of its size; it is so like that species that a comparison of the two is necessary in order to detect any difference, but the posterior legs are proportionately broader, and the tarsal joints also differ slightly in form. It has none of the bright-red colouring of the worker. Mr. Lewis found it dead near to a hive of "*nigro-cincta*," and he informs me that he has not observed the *Apis mellifica* in Japan.

IX. *Contributions to Entomological Bibliography up to* 1862.—No. 1. By Albert Müller, F.L.S.

[Read 17th February, 1873.]

The student who now-a-days wishes to become acquainted with the literary doings of Entomologists, starts with enormous advantages over his brethren of an earlier period. The German "Berichte über die Entomologie," the "Zoological Record," the "Record of American Entomology," the "Petites Nouvelles Entomologiques," and the numerous bibliographical reviews issued by learned bodies and scientific journals at home and abroad, all combine to provide inquirers with the necessary information. The "Catalogue of Scientific Papers," published under the auspices of the Royal Society, and the "Bibliotheca Entomologica" of Dr. Hermann August Hagen, are of course quite indispensable to any one desirous of tracing either the work done by certain workers, or the history of any special branch. As regards the last-named work, every Entomologist ought to be truly grateful to its learned and industrious author. For my own part, I confess that it has become to me almost as indispensable as my daily bread; and that it has not been very often the case, that, in matters of scientific importance, its pages have been referred to in vain. The book is a safe guide on the royal road to entomological knowledge, and this being the case, it would seem to be the duty of those who have profited by it to place on record such additions as they may meet with in exploring the byways of literature. Hoping that others will follow my example, I hereby beg to offer a first instalment of such additions. With a single exception, I have abstained from offering any comments on the value of the works enumerated, as I hold with Dr. Johnson, that "no book is so worthless as not to contain something good."

Following Dr. Hagen's example, I have included works written for incipients and children, as their enumeration may be useful to those engaged in teaching popular

science. A single star (*) marks that I have seen the book; ** indicate that it is in my library.

ALLENT, B.

*1. Les Animaux industrieux, ou description des ruses qu'ils mettent en œuvre pour saisir leur proie et fuir leurs ennemis, des moyens qu'ils employent dans la construction de leurs habitations; de leurs combats; de leurs jeux et de toutes les ressources qu'ils ont reçues de la nature, pour veiller à l'entretien et à la conservation de leur vie. Ouvrage instructif et amusant destiné à la jeunesse des deux sexes. 8vo., 2me édition, Paris, 1824.

(P. 203—285, des insectes; p. 208, le fourmi-lion; p. 216, le cousin; p. 219, les abeilles; p. 230, les guêpes; p. 236; le ver-à-soie; p. 246, les chenilles; p. 250, la teigne; p. 252, les araignées; p. 264, les fourmis; p. 267, les vag-vagues (Termès); p. 274, la mouche; p. 275, le Cynips; p. 278, les habitants du fraisier; p. 285, les insectes d'un jour.)

ANSTED, DAVID THOMAS (and ROBERT GORDON LATHAM).

*1a. The Channel Islands, &c. London, 1862, 8vo., p. xxviii., and p. 604, plates. (Lists of Insects, pp. 221—231.)

ARBUTHNOT, DR.

*2. Miscellaneous Works. Glasgow, 1751, 8vo., pp. 130—135.

I. The Congress of Bees, or political remarks on the Bees, swarming at St. James', with a prognostication on that occasion from the Smyrna Coffeehouse; wherein is contained a surprising story of a swarm of Bees, taken from a manuscript in Gresham College, and supposed to be wrote by Sir John Mandeville. II. A political description of Hornets and Wasps, translated from the works of that famous Roman satyrist Petronius Arbiter:—

Motto:—

"Here are bees in the country — and bees in the court,"
"Bees subtle contrivance — and making of sport;"
"Be candid, kind reader — and judge as you please,"
"But if you are morose — you will be stung by the bees!"

(Contains satirical remarks on court life and customs, but no entomological matter. Is placed here merely on account of the title and of the motto, to save Entomologists the trouble of referring to it.)

BAYLY, T. H.

3. Psyche; or Songs on Butterflies, &c., attempted in Latin Rhyme, with a few additional Trifles. 8vo., 40 pp., Malton, 1828.

BERGSÖE, V.

4. Oldenborrens (Melolontha) Naturhistorie og udbredelse i Danmark. Kjöbenhavn, 1862, 8vo. (woodcuts by Schiödte).

(Cf. Friedländer's Catalog, 1868, No. 167.)

BERKELEY, J., in London.

On a Gall gathered in Cuba, &c. Hagen, Bibl. Ent. i., p. 45, No. 1.
Add ** extract: "Entomologist," 1840—1842, Vol. I., p. 162.

BERTOLONI, G.

5. Illustraz. dei Insetti Ditteri del Mozambico. Bologna, 1862, 4to., 1 tav.

(Cf. Friedländer's Catalog, 1868, No. 167.)

BETTA, V.

6. De quibusd. Coleopteris agri Ticin. Ticini, 1847, 8vo.

(Cf. Friedländer's Catalog, 1868, No. 167.)

BEYER, KÜHNER und KIRSTEN.
Illustrirter neuester Bienenfreund, etc. Hagen, Bibl. Ent. i., p. 50, No. 1.
Add 4te Anflage, Berlin, 1862. 72 Abbild.

BOITARD, PIERRE.
Add to No. 5 in Hagen's Bibl. Ent. i., p. 66.
*Ed.—Nouvel Manuel complet du Naturaliste préparateur suivi d'un traité des embaumements. Paris, Roret, 1845, 18vo, 3 planches. (Insectes, pp. 38—70, 296—306, 340—353.)

BOOTH, A.
*7. The Stranger's Intellectual Guide to London for 1839—1840. London, 1839, 8vo.
("This little work contains a history of the rise and progress of the Entomological Society;" cf. Cat. of Books in Library Ent. Soc. Lond. in Trans. Ent. Soc. Lond. new ser. v., p. iv. (1858—1861).

BORELLI, JOHANN ALPHONS.
Add to No. 1 in Hagen's Bibl. Ent. i., p. 73.
Ed.—De Motu Animalium, edito novissima add. Bernouillii de Motu Musculorum, plates; 4to., Lugduni Batavorum, 1710.

BOSWELL, PETER, Greenlaw.
**8. The Art of Taxidermy, containing a practical knowledge of the most improved methods of preserving Quadrupeds, Birds, Fishes, Insects and other objects of natural history. New edition. London, 1841, 32mo., p. 76, pl. 1.
(Insects, pp. 20—49.)
9. Bees, Pigeons, Rabbits and the Canary Bird familiarly described; their habits, propensities, dispositions fully explained; mode of treatment in health and disease plainly laid down, and the whole adapted as a text-book for the young student. 18—? 32mo.
(Noticed on the cover of No. 8.)

BREMER, OTTO.
Add to No. 2 in Hagen's Bibl. Ent. i., p. 86, "Beiträge," &c. (with Wm. Grey).
Two coloured plates of Lepidoptera.

BREMI-WOLF, J. J.
*10. Einladung an die Freunde der entomologischen Biologie.—Wink für Coleopterologen.—Coleoptera in Kröten-Mist, etc.
Stett. Ent. Zeit., 1852, pp. 158—160.

BUSCH, F. B.
11. Die Bienenzucht in Strohwohnungen mit unbeweglichem Wabenbau. Leipzig, 1862, 37 wood cuts.

CHEVRIER, F.
*12. Description des Chrysides du bassin du Leman. Genève, 1862, 8vo., p. 134.
(*Gerstäcker's Bericht for 1862, p. 132.)

CHEVROLAT, AUG., Paris.
**13. Strictures on "Entomological Notes by Edward Newman." (Nomenclature of Coleoptera.)
Entomologist, i., 1842, p. 355.

CICCONI, D.
14. Sul Corpo grasso del Baco da Seta. Firenze, 1861, 8vo., 1 tav. in fol.
(Cf. Friedländer's Catalog, 1868, No. 167.)

Chylinski, Dobrogost.

*15. The Bee Keeper's Manual, founded on the experience during many centuries of the Apiarians of Poland; dedicated to the Agriculturists of Great Britain. London, 1845, 12mo.

Clarke, L. Lane, Woodeaton Rectory, Oxford.

**16. A Chapter on Flies' Heads, fig.
Recreative Science, 1860, August, No. 13.

**17. The Antennæ of Flies, fig.
Recreative Science, 1860, Sept., No. 14, pp. 134—137.

Cleghorn, Hugh (Conservator of Forests, Madras), Stravithy, St. Andrews.

*18. The Forests and Gardens of South India. London, 1861, 12mo., p. 412; forest chart and 13 plates.
(Noxious Insects, pp. 15 and 83; pp. 70—72, Xylocopa latipes and economy, plate II. etc.; bibliography, pp. 381—397.)

Cooke, M. C., in London.

**19. Notes on Galls.
Technologist, 1861, pp. 181—187, fig.

**20. The Tussch Silk Moth. (Antheræa Paphia, Hübner.)
Technologist, 1861, pp. 353—355, 1 plate.

Cooling, Edwin.

21. The Domestic Gardener's Assistant, also Management of Bees. Derby, 1837, 12mo.

Cooper, W. F., Sheffield.

**22. The Water Beetle (Dytiscus marginalis; Anatomy).
Recreative Science, 1861, June, No. 23, pp. 83—87, fig.

Darwin, Charles, in Down, Kent.

**23. On the Fertilization of British Orchids by Insect Agency.
Gardener's Chronicle, 1860, June 9.
Reprinted in Ent. Weekly Intelligencer, Vol. VIII., 1860, pp. 93, 94, 102, 103.

**24. On the various Contrivances by which British and Foreign Orchids are fertilized by Insects, and on the good effects of intercrossing. London, 1862, 8vo., p. 365. Illustrations.

Deakin, Richard.

**25. The Nettle and the Wasp. Harmonies of Nature reflected in Art. Nat. Hist. of Vanessa urticæ.
Recreative Science, 1859, Octr., No. 3, pp. 77—84, fig.

Dickson, R. N.

26. Live Stock and Cattle Management; on the Culture of Bees, Fish, etc. 2 vols. 4to., 1824, plates.

Dillwyn, L. W.

**27. Materials for a Fauna and Flora of Swansea and its Neighbourhood. Swansea, 1848, p. 44, 8vo. Not published. (Insects, pp. 18—25.)

Dohrn, Carl August, Stettin.

*28. Zuckerbienen.
Stett. Ent. Zeit. 1861, T. 22, pp. 9—11.

Doubleday, Edward.

Add to No. 37 in Hagen's Bibl. Ent. i., p. 180.
* "On a Gall-producing Insect from China." (Aphis), Pharmaceutic Journal, 1847, T. 7, pp. 310—312, fig.

Du Breuil, A.

29. Manuel d'Arboriculture. Paris, 1860. (Insectes nuisibles.)

Dudgeon, R. E., London.

**30. Monstrosity in a Beetle. (Bembidium littorale; femur of right hind leg with three perfect tibiæ, with their perfect tarsi and claws.) How to kill Beetles.
Ent. Weekly Intelligencer, 1857, Vol. III., pp. 54, 55.

Edgeworth, Richard L., of Edgeworthstown.

**31. Wasps (fig. wasps' nests).
Recreative Science, 1861, June, No. 23, pp. 69—76.

Eichelberg, J. F. A.

32. Abbildung und Beschreibung aller Thiere, welche die wichtigsten Producte für Handel und Industrie liefern. Zürich, 1847, 8vo., 36 Taf.
(Query: if insects are included?)

Falconer.

33. Collections relating to Natural History, from Greek and Roman Authors. Cambridge, 1793, 4to.

Fauvel, A., in Caën.

34. Coléoptères de la Nouvelle-Calédonie. Caën, 1862, 8vo., pl. 3.

Fitzgerald.

35. Surveys of Nature, containing the Natural History of the Human Species and General Mammalia, Birds, Fishes, Mollusca and Shells, Insects, Worms, Zoophytes, etc. 2 vols. 4to., plates (date ?).

Gaylord, Willis, Onondaga, New York.

**36. A Treatise on Insects injurious to Field Crops, Fruit Orchards, Vegetable Gardens and Domestic Animals: with a Description of each and the best methods of destroying them or preventing their Ravages. New York, 1843, 8vo., pp. 129—174, plates 3.
(Forms part of the Prize Essays of the New York State Agricultural Society.)

Gmelin, C. C., of Badenweiler.

37. Ueber den Einfluss der Naturwissenschaft auf das gesammte Staatswohl, vorzüglich auf Land und Zeit berechnet. Karlsruhe, 1809.
(*Inter alia*, Bee-keeping.)

Gosse, Philip Henry.

*38. Life in its lower, intermediate and higher Forms, or Manifestations of the Divine Wisdom in the Natural History of Animals. London, 1857, 8vo., p. 363.
(Insects, Chap. XVI.—XIX., pp. 149—178, fig.)

*39. Letters from Alabama (U. S.), chiefly relating to Natural History. London, 1859, 12mo., p. 306, fig.
(Chiefly entomological. These letters have already appeared in the form of Contributions to a Magazine, entitled the "Home Friend," cf. Preface.)

De Gosse, Isid. S.

*40. Histoire Naturelle Drolatique et Philosophique des Professeurs du Jardin des Plantes, des Aide-Naturalistes, Préparateurs, etc. attachés à cet Etablissement, accompagnée d'Episodes scientifiques

et pittoresques. Avec des Annotations de M. Frédéric Gérard, Ancien rédacteur en chef du Dictionnaire universel d'Histoire naturelle. Paris, Gustave Sandré, 1847, 12mo., p. 296. Entomologie, pp. 144—181.

(Recorded here *in damnandam memoriam auctoris*. This book is full of personal offensive remarks of no use whatever to science. The contents are conceived in bad taste, and do not deserve the above pompous title, except on the "*lucus a non lucendo*" principle.)

GOUREAU, CH.

**41. Les Insectes Nuisibles aux Arbres Fruitiers, aux Plantes Potagères, aux Céréales et aux Plantes Fourragères. Paris, 1861, 8vo., pp. 366.

GUIBOURT, N. J. B. G.

42. On the Galls of Terebinthus and Pistacia.
Pharmaceut. Journal, 1844, Vol. III.

HAGEN, H. A.

Add to No. 30, Bibl. Ent. p. 329.
Ueber John Hill's angeblich erdichtete Insecten.
** Translated by J. W. Douglas in Proc. Ent. Soc. Lond. 1853, pp. 120, 121.

VON HAIMHOFFEN, G. R.

**43. Beobachtungen über den Wurzelauswuchs an Alyssum incanum und dessen Erzeuger. (Centhorhynchus sulcicollis & Parasit, Taphæus conformis, Wesm.)
Verhandl. Zool. Bot. Ver. Wien, 1855, Vol. V., pp. 525—528.

HARRISON, C. WEIGHTMAN.

**44. The Cabinet of British Entomology: containing, in a systematic arrangement, carefully coloured illustrations and descriptions from Nature of the most beautiful and interesting native insects. London, 16o., 12 coloured plates, numbered I.—XII. 30 pp. letter-press not paged.

No. 1, March, 1854, p. 6, and pl. 3; No. 2, April, 1854, p. 8, and pl. 3; No. 3, May, 1854, p. 8, and pl. 3; No. 4, June, 1854, p. 8, and pl. 3. No. 5 is advertised in No. 4, but does not seem to have appeared.

(Nos. 1 to 4 contain Cicindelidæ, Brachinidæ, Harpalidæ, Carabidæ, Dytiscidæ, Gyrinidæ, figured and described, and 6 pages "Entomological Notes and Proceedings." [Ent. Soc. Lond.])

HARVEY, A.

45. Identity between the Bud and the Seed, as given by the Monads, Trees, Bees, etc. 12mo., 1857.

HARTLIB, SAMUEL.

46. His Legacy of Husbandry, bequething to the Commonwealth of England many Outlandish Experiments and Secrets never before divulged. London, 1655, 4to.

(Contains a letter from King James on, and instructions for, breeding Silkworms, and planting Mulberry Trees in England. Query, if identical with No. 3 in Hagen's Bibl. Ent. i., p. 348?)

HÉRISSANT, L. A. P.

*47. Bibliothèque Physique de la France, ou Liste de tous les Ouvrages, tant imprimés que manuscrits, qui traitent de l'Histoire Naturelle de ce Royaume, avec un éloge historique de l'auteur. Paris, 1771, 8vo., pp. 496.

Hibberd, Shirley.

48. The Garden Oracle and Economic Year Book. London, Vol. I. 1859; Vol. II. 1860; Vol. III. 1861.
Cf. Recreative Science, 1861, No. 20.
(Contains *inter alia* hints to keepers of bees.)

Hofmann, Edler von Hofmannsthal.

49. Die Caruba di Guidea. Wien, 1842, fig.
(Figures of the pod-like gall on Pistacia Terebinthus and its Aphis; cf. *Erichson's Bericht über die Entomologie, pro 1842, p. 126.)

Humphreys, H. Noel.

*50. Night-flying Moths.
Recreative Science, 1859, August, No. 1, pp. 25—28.

*51. The Burying Beetles, or Sextons.
Recreative Science, 1860, April, No. 9, pp. 307—310.

**52. Wingless Moths.
Recreative Science, 1860, Sept., No. 14, pp. 105—108, fig.

Imhoff, Ludwig. Born 22 Oct. 1801, died 13 Sept. 1868, at Basle.

For additions to Dr. Hagen's list, cf. the Entomologist's Monthly Mag., Vol. VI., p. 17.
Although not strictly within the compass of this paper, I give here a list of the publications where particulars of this Entomologist's scientific career may be found.
** Geschichte der Schweiz. Naturf. Gesellschaft. Zürich, 1865, 4to., p. 27, etc.
** Obituary Notice, by myself. Ent. Mo. Mag., Nov. 1868, Vol. V., pp. 150—152.
** The late Dr. L. Imhoff's Works, Manuscripts and Collections; by myself. Ent. Mo. Mag. June, 1869, Vol. VI., pp. 17, 18.
** "Basler Nachrichten," 16 Sept. 1868. Anonymous obituary notice.
** Necrolog von Dr. L. Imhoff, by A. Bischoff-Ehinger. Mittheil. Schweiz. Ent. G. Vol. III., No. 2, pp. 73—81 (1869), and list of his writings.

Jarman, D. F., Hadley, Barnet, near London.

*53. Capture of Aphanisticus pusillus in November.
Zoologist, 1853, p. 4134.

Jekel, Henry.

**54. Note on Omias sulcifrons.
Proc. Ent. Soc. Lond. 1855, pp. 85, 86.

De Joannis, L.

55. Note sur une Galle du Nasturtium palustre, D. C.
Angers, Annales Soc. Linn. 1858, pp. 178—181.

Kayser, J. C.

Add to Hagen, Bibl. Ent. i., p. 410. Deutschland's Schmetterlinge, etc. "848 coloured plates."

Kidd, Wm., of Hammersmith.

56. Kidd's own Journal, for intercommunication on Natural History, Popular Science, and things in general. London, 1852, 8vo.
(Contains many entomological articles by Charles Miller and others.)

Layard, Edgar Leop.

*57. Letter on Insects injurious to Bamboo in Ceylon.
Proc. Ent. Soc. Lond. 1852, pp. 22, 23.

Leminius, Levinus, (Medicus Zirizæus).

**58. Herb. Bibl. Explicatio, Zirizææ, Maij. 1566, 16o. p. 134 et index: vide p. 28, Caput 11; "De Cocco vermiculo, Conchylio, Murice Ostro ac colore purpureo Belgæ *Scarlaken* vocant ende Cramezijn."

Lewes, Geo. Henry.

59. Studies in Animal Life. London: Smith, Elder & Co., 1862, 8vo., (popular; partly entomological).

Lovell, Robert.

60. Panzoologicomineralogia, or a complete History of Animals and Minerals, containing the summe of all Authors. 12mo., Oxford, 1661.
(? if entomological.)

Mackay, John.

**61. Some Remarks upon Shellac, with especial reference to its present commercial position. (Coccus laeca.)
Technologist, 1861, Vol. I., pp. 204—209.

M'Lachlan, Robert, London.

**62. Notes and Queries (Macro- and Micro-Lep.).
Ent. Weekly Intelligencer, 1861, Vol. X., pp. 70—72.

**63. Remarks on the supposed Influence of the Food on the Larvæ in causing Variations in Lepidoptera.
Ibidem, 1861, Vol. X., pp. 157—159.

**64. Chimarra versus Aecntropus.
Ibidem, 1861, Vol. IX., pp. 132-133.

Melly, André, born 12 May, 1802, at Geneva, died 15 January, 1851, near Abuhammed, in the Nubian desert of Korosko.
* Obituary notice by H. Schaum.
Stett. Ent. Zeit., 1852, pp. 67—71.

More, Sir F.

65. England's Interest, or the Gentleman's and Farmer's Friend. London, 1703. 2nd ed. (pp. 95—161:—Of the Husbandry and Employment of Bees, and the great Profit and Advantage thereof.)

Murray, Andrew ?

66. Fossil Insects in Trap Rock, East Indies. Plates, 1860?
(I am very doubtful concerning this paper, and should feel obliged for precise information as to its existence.)

Murray, Andrew, in London. (Anonymous.)

*67. The Skip-Jack, or Wireworm and the Slug, with Notices of the Microscope, Barometer and Thermometer. For the use of Parish Schools. Edinburgh and London, 1858, 8vo., p. 64. 10 Woodcuts of Elateridæ in all stages, Cataphagus obscurus, etc.

Chap. I. The Beetle .. .. p. 1
II. The Egg 6
III. The Grub 8
IV. The Pupa or Chrysalis 16
V. The Ravages of the Wireworm .. 20
VI. The means of Prevention and Cure 23—31

NEWMAN, EDWARD, in Peckham.

**68. A Paper on the Nomenclature of the Parts of the Head of Insects (read before the Entomological Society of London, December 2nd, 1833, and published, with explanatory Plates, in the Entomological Magazine). London: printed for the Author, 1834, 8vo., p. 36.

**69. An Essay on the Employment of Physiological Characters in the Classification of Animals, being the Substance of a Paper read before the Greenwich Natural History Club, December 6, 1856. London: Van Voorst, 8vo., p. 32 (Insects).

NEWTON, THOMAS, late Lord Bishop of Bristol.

*70. On the Locusts of the Prophecies, compared with those of Nature. Dissertations on the Prophecies, etc. London, 1852, 8vo. (Preface dated October 5, 1754), in Diss. xxiv., pp. 541—549.

NORMANDY, A.

71. Farmer's Manual of Agricultural Chemistry, with Instructions respecting the Diseases of Cereals and the destruction of the Insects injurious to Plants. 1852, 12mo.

OETTL, J. N.

Add to Hagen, Bibl. Ent. ii., p. 19, No. 1; Klaus, Der Bienenvater aus Böhmen. Prag. 1862, 8vo., 4th ed. 53 figg.

PARFITT, EDWARD, Exeter.

**72. Morphology in Sialis lutarius.
Ent. Weekly Intelligencer, 1859, Vol. VI., p. 159.

PEARSALL, R.

73. Contemplations on the Ocean, Harvest, Butterflies, the Full Moon, etc. Plates, 2 vols., 12mo., 1755—1757.

PAYNE, J. H.

74. Bee Keepers' Guide, upon the depriving system. London, 1846, 8vo.

PICTET, FRANÇOIS JULES.

*75. Note sur les étuis de Phryganes envoyés de Brésil par M. Blanchet, Bib. Univ. v. 1836, pp. 198—200, under the initials "F. J. P.," cf. E. M. Mag., Vol. VIII., p. 294.

PIGNORIUS LAURENTIUS (Patavinus).

*76. Characteres Ægyptii, hoc est, sacrorum quibus Ægyptii utuntur, simulachrorum accurata delineatio et explicatio, qua antiquissimarum superstitionum origines, progressiones, ritusque, ad Barbaram, Græcam et Romanam historiam illustrandam, enarrantur, et multa scriptorum veterum loca explicantur atque emendantur, etc. Francofurti Typis Matthiæ Beckeri, etc., 1608, 12mo., pp. 43 (86), Pl. 16. (Insecta nonnulla fig.)

P. 22 a, Scarabæus; p. 41 b, scorpio cui sacer.

P. 31 b (fig.). "Superius pandit alienas alas Scarabæus Solis imago, ejusdemq; in cursu æmulus, in exuenda senecta Lunæ exemplar, ejus encomia cũ alii collegerint, sufficiet apposuisse hic antiquam Gemmæ sculpturam . . . . . In ea Solis caput concinne Scarabæo impositum, quæ omnia serpens caudam vorans ambit, ut daretur intelligi fortasse, orbis hujus lucem a Sole esse, qui sapiente cursu vitam animantium moderetur."

Pol, Lucius, Dekan; born 15 (o. st.) March, 1754, in St. Moritz; died 2 December, 1828, in Fideris, Grisons.

77. Ideen zur Pterologie der Insecten. Luzein, 18—.
(The "Bündtner Sammler," 6 vol., 1772—1784, is said to contain entomological papers by him, concerning the Fauna of the Grisons.)

Rendu, Victor.

Add to Hagen, Bibl. Ent. ii., p. 72, No. 3, "La providence révélée par ses moindres ouvrages ou tableau des mœurs des Insectes," pl. 14. Paris, 1838, 8vo.

Rennie, James.

Add to Hagen, Bibl. Ent. ii., p. 72, No. 3: Die Baukunst der Insecten. Aus dem Englischen von Kottenkamp, figg. Stuttgart, 1847, 8vo., 2 vol.

Robertson, C. Hope, of Muckross, Killarney.

**78. How do Butterflies' Wings grow?
Recreative Science, 1861, Feb., No. 19, pp. 316-317, fig.

Rosenhauer, W. G.

* Add to Hagen, Bibl. Ent. ii., p. 92, No. 8: Ueber Trypeta arnicivora, Loew. Larva von Attagenus Schæfferi, Hbst.

Rowney, T., of Hull.

**79. Microscopic Anatomy (of the Cockroach).
Recreative Science, 1861, March, No. 20, pp. 325—333, fig.

De la Rue, Warren, in London.

*80. On Cochineal (Coccus Cacti).
Pharmaceut. Journal, Vol. VII., 1847-48, pp. 432—437 (Microscopical examination of the living Coccus, p. 432. The rest of the paper chemical.)

Samuelson, James, Liverpool.

**81. The "Whirligig" Beetle (Gyrinus natator).
Recreative Science, 1861, Feb., No. 19, pp. 305—314, fig.

Say, Thomas J.

Add to Hagen, Bibl. Ent. ii., p. 110.
Biographical Sketch of Thomas J. Say, Esq. By B. H. Coates, M.D., Philadelphia, 8vo. 1835.
** Death of Mr. Say, the American Entomologist.
Entom. Mag. 1835, Vol. II., pp. 536—538.

Simmonds, Peter Lund, in London, Editor of the "Technologist."

**82. The Production of and Trade in Bees' Wax.
"Technologist," Vol. I., 1861, pp. 77—82.

**83. The Sources of Manna (Coccus manniparus, etc.)
Ibid., Vol. I., 1861, pp. 225—228.

**84. Insect Medicines (Cantharides).
Ibid., Vol. I., 1861, pp. 231—234.

**85. The Sources of Musk (*inter alia*, Callichroma moschata; Cerambyx from Borneo and Asia; Cerambyx rosalia from the Pyrenees).
Ibid., Vol. I., 1861, pp. 144—148.

Spence, William.

**86. Bostrichus bambusæ.
Proc. Ent. Soc. Lond., 1852, pp. 1-2.

STARK, JOHN.

* Add to Hagen, Bibl. Ent. ii., p. 190, No. 1; Vol. II., Invertebrata, etc. Insecta, pp. 213–392, figg.

STEPHENSON, JOHN.

*87. Medical Zoology and Mineralogy, including an Account of Animal and Mineral Poisons. London, 1838, 8vo., pp. 345, 45 col. Plates. (A chapter on Insects, with several plates.)

TEGETMEIER, W. B.

**88. Bees drinking from a Chalybeate Spring.
Proc. Ent. Soc. Lond., 1859, p. 78.

WALKER, FRANCIS.

**89. The Aphis of the Cowslip.
(Under the pseudonym of "Tot."
Entom. Mag., 1835, Vol. III., p. 208.

**90. A Hailstone Fly (Chlorops lineata).
Ent. Weekly Intelligencer, 1859, Vol. VII., p. 76.

WALLACE, ALFRED R.

**91. List of Coleoptera, which he has added to the Catalogue, I (Dillwyn) printed in 1829, and which are now placed in the Museum at Neath.
Dillwyn's Materials for a Fauna and Flora of Swansea. Swansea, 8vo., 1848, on p. 25.

WALSER, DR. SCHWABHAUSEN.

92. Spathidopteryx capillata, Kol. in der Larvenperiode.
XV. Bericht des naturhist. Vereins in Augsburg, 1862.

WATTS, SUSANNA.

**93. The Insects in Council, addressed to Entomologists, with other Poems. London, 1828, 12mo., p. 72.
(An entomological fable, and notes on insects mentioned therein.)

WILLKOMM, DR. MORITZ.

**94. Die Wunder des Microscops, oder die Welt im kleinsten Raume, 2te. Anfl. Leipzig, 1861, 12mo., p. 287. (Insecta, pp. 213–230.)

WILSON, JAMES.

*95. Descriptive Sketches of the Natural History of the North-American Regions. (Insects, pp. 385–389.)
In "Historical View of the Progress of Discovery on the more Northern Coasts of America, etc., by Patrick Fraser Tytler, with descriptive Sketches, etc." Edinburgh, 1832.

ZSCHORN, C.

**96. Cryptocephalus-Gehäuse.
Germar's Magazin der Entomologie, 1813, Vol. I., p. 136.

X. *On the Geodephagous* Coleoptera *of Japan.*

By H. W. Bates, F.L.S.

[Read 17th February, 1873.]

The following enumeration and description of the *Cicindelidæ* and *Carabidæ* of Japan are founded chiefly on the magnificent collection made by Mr. George Lewis during a five years' residence in that country, chiefly at Nagasaki, in the island of Kushiu, and at Hiogo and Osaka in the main island of Nipon. Although these two families had already received much attention, chiefly from Russian travellers and residents, and a large number had been described by Morawitz, Motschulsky, and others; Mr. Lewis has more than trebled the number of known species from this country, and added 120 new species to science.

The total number now known is 244 species, comprised in 84 genera, a number that will no doubt be yet considerably increased, as the British Islands, lying in a much more northerly latitude, contain many more, viz., 311 species. It is not very probable, however, that future discoveries will alter materially the general character of the Fauna of Japan in this department; for, although the larger portion of the island of Nipon to the north and east is as yet unworked; collections have been received from many distant points on all the islands, and they show a tolerable uniformity in their productions. We may consider, therefore, that we have now material sufficient to afford a fair idea of the relations of the Coleopterous Fauna of Japan with that of other countries whose productions are equally well known; and the *Geodephaga* may be taken as very good representatives of all the *Coleoptera* for this purpose.

The first stage in the inquiry is the most difficult, viz., how far is the Fauna of Japan endemic or peculiar? the difficulty arising from our ignorance of the productions of that part of the Asiatic continent which lies nearest to the islands, viz., Korea. The straits between the larger islands of Japan and Korea are partly bridged over by smaller islands, so that the widest space of sea to be

traversed in passing from the one to the other does not exceed thirty miles, or a little wider than the Straits of Dover. Moreover, the sea is shallow, the maximum depth being about 70 fathoms, so that an elevation of say 500 feet,—which may well have taken place during the life-time of existing species,—would convert the Archipelago into a peninsula of Asia. The islands, therefore, are not geographically oceanic, and we can scarcely expect a great degree of endemicity, such as is found in the Canaries, Madagascar, and other oceanic or suboceanic islands whose Fauna is not wholly modern and derivative. However, the number of Geodephagous genera peculiar to Japan, including that strangest of all, *Damaster*, is no less than nine,—a large proportion out of eighty-four. I am inclined to think that this proportion will not be very much reduced by future discoveries; although Korea is unknown, we are tolerably well acquainted with the Geodephagous Fauna of the Amur a little farther north, and with that of the coast region of the temperate zone of China to the east, where also Mr. Lewis made a most interesting collection; *Carabidæ*, moreover, have been collected to some extent in the coast country of Manchuria, adjoining Korea, and in the island of Saghalien, which almost connects the north of Japan with the north-eastern mainland of Asia.

Next, as to the relations of the Japanese Fauna with that of the great Northern or Palæarctic Fauna of Europe and Asia. Russian Entomologists, who have worked assiduously at the Coleopterous Fauna of Siberia, have repeatedly noticed its uniformity with that of Europe,—even Western Europe,—the similarity decreasing pretty regularly, but, according to them, not very considerably in proceeding from west to east. They have also remarked on the essential identity of the Japanese with this great Palæarctic Fauna. Mr. Lewis himself, as he informs me, was much struck with the similarity of Japanese *Coleoptera* with those of Great Britain. Let us see how far these views are confirmed by close examination of the distribution of the genera of *Geodephaga*. With regard to species, the number common to Japan and Western Europe is very limited.

A fair comparison between Japan and Western Europe cannot well be made, for there is no tract of land in the West analogous to Japan in geographical position. Great Britain is not at all a close analogy, as the whole of it lies far to the north of the latitude of the Japanese Archipelago,

which is included between the parallels of 31° and 44° north. A tract of land measured off in Western Europe in the same latitudes would have its northern extremity at Bordeaux and its southern at the Atlas Mountains. However, as the climate of the eastern side of northern continents is colder than than that of the western side, and the Isotherm of 50° passing through the centre of England and the north of Nipon, it would be fair to give the European term of the comparison a more northerly extension, and compare Japan with a western area extending, say from the South of England to Tangier.

The number of genera of *Geodephaga* found in this part of Western Europe is ninety-six; the number common to Western Europe and Japan only forty-four, nearly all of which are universally distributed, or at least over the temperate zones of the earth. There are no fewer than fifty-two (or more than one half,) West European genera of *Carabidæ* unknown to Japan, and vice versâ, thirty-eight Japanese genera are unknown to Western Europe. I think this is conclusive that there is no identity between the two Faunas, and that their origin is, therefore, not to be explained by the same set of causes.

There is a rather closer connection between the Japanese Geodephagous Fauna and that of Eastern Siberia; but there is an equally close, perhaps closer connection between it and the Fauna of Eastern tropical Asia. Of the eighty-four Japanese genera, twenty-one are elsewhere found only between the tropics, chiefly in Asia. It is striking to find in Japan some of the most curious Geodephagous genera of Birmah and India, such as *Eustra, Bothynoptera, Crossoglossa, Dicranoncus*, and others, which have not yet been found even in China. Other tropical genera also represented in Japan are *Colpodes, Drimostoma, Trigonotoma, Triplogenius, Calleida.* On the other hand, the more boreal of the European genera extending throughout Siberia, and some of them through North America, are absent from Japan, such as *Notiophilus, Elaphrus, Blethisa, Pelophila, Leistus, Loricera, Miscodera, Stomis*, and many others. The most characteristic genera inhabiting Western Europe in similar latitudes to Japan are also wholly absent, such as *Siagona, Broscus, Licinus, Aristus, Ditomus, Carterus, Acinopus, Ophonus, Olisthopus, Molops, Pogonus*, and others.

Professor Asa Gray, the eminent botanist, announced many years ago in a treatise on the Japanese Flora, that

there was a distinct affinity between the Flora of Japan and that of the Atlantic States of North America, *i. e.*, genera are found in these two regions which do not exist elsewhere. I have naturally been curious to ascertain whether the Geodephagous *Coleoptera* showed any trace of this curious connection, and am able to say that there is an unmistakable trace. It is in the well-marked genus *Lachnocrepis*, allied to *Oödes*, of which I here describe a species, and which is at present known from no other part of the world than the South-Eastern States of North America and Japan. There is no similar connection between Japan and the Western side of N. America, or the Western side of Europe. There are traces of similarity too in the genus *Pristodactyla*, allied species being found in Japan and in Eastern North America. I am inclined to attribute this singular relationship of Faunas by the migration of Northern types from their Miocene homes in the arctic circle on the advent of the glacial epoch. The species would migrate along different meridians towards the South, and such as were adapted to the extreme climates of the Eastern sides of both the great continents would finally settle there, or at least that remnant of them that escaped extinction.

List of Species.

Family CICINDELIDÆ.

Cicindela Chinensis, DeGeer.
Japonica, Guér.
Japanensis, Chaud.
Lewisii, n. sp.
lætescripta, Motsch.
Amurensis, Moraw.
speculifera, Chevr.
gracilis, Pallas.

Family CARABIDÆ.

Subfam. Omophroninæ.

Omophron æqualis, Moraw.

Subfam. Carabinæ.

Cychrus convexus, Moraw.
Damaster blaptoïdes, Kollar.
Lewisii, Rye.
Fortunei, Adams.
pandurus, n. s.
rugipennis, Motsch.
Carabus Dehaanii, Chaud.
Yaconinus, n. sp.
insulicola, Chaud.
Maiyasanus, n. sp.
Carabus Albrechti, Moraw.
procerulus, Chaud.
granulatus, L.
tuberculatus, Fisch.
Calosoma Maximowiczi, Moraw.
mikado, n. sp.
Nebria livida, L.
macrogona, n. sp.
pulcherrima, n. sp.
Chinensis, Bates.

Subfam. Ozæninæ.

Eustra plagiata, Schmidt-Goebel.

Subfam. Scaritinæ.

Scarites aterrimus, Moraw.
pacificus, n. sp.
Clivina lata, Putz.
humilis, Moraw.
Niponensis, n. sp.
Dyschirius cheloscelis, n. sp.
Steno, n. sp.
ordinatus, n. sp.
orientalis, Putz.
Hiogoensis, n. sp.

Dyschirius daimiellus, n. sp.
sphærulifer, n. sp.

Subfam. BROSCINÆ.

Craspedonotus tibialis, Schaum.

Subfam. PANAGÆINÆ.

Eudema flavopilosum, Chaud.
Dischissus (n. g.) mirandus, n. sp.
quadrinotatus, Motsch.
Peronomerus nigrinus, n. sp.
Panagæus Japonicus, Chaud.
singularis, n. sp.
robustus, Moraw.

Subfam. CHLŒNIINÆ.

Callistomimus modestus, Schaum.
Chlœnius næviger, Moraw.
hospes, Moraw.
pictus, Chaud.
abstersus, n. sp.
aspericollis, n. sp.
subhamatus, Chaud.
deliciolus, n. sp.
pericallus, Redtenb.
spoliatus, Rossi.
xanthopleurus, Chaud.
circumductus, Moraw.
callichloris, n. sp.
inops, Chaud.
culminatus, n. sp.
Noguchii, n. sp.
variicornis, Moraw.
ocreatus, n. sp.
pallipes, Gebler.
præfectus, n. sp.
costiger, Chaud.

Subfam. OODIDINÆ.

Oödes vicarius, n. sp.
prolixus, n. sp.
vilis, Chaud.
Lachnocrepis Japonicus, n. sp.

Subfam. LICININÆ.

Rembus opacus, Chaud.
gigas, n. sp.
elongatus, n. sp.
Badister pictus, n. sp.
nigriceps, Moraw.
vittatus, n. sp.
marginellus, n. sp.

Subfam. ANISODACTYLINÆ.

Anisodactylus signatus, Illig.
punctatipennis, Moraw.
tricuspidatus, Moraw.
Dichirotrichus tenuimanus, n. sp.

Subfam. HARPALINÆ.

Harpalus capito, Moraw.
ruficornis, F.
griseus, Panz.
roninus, n. sp.
tridens, Moraw.
lævicollis, Dufts.
Japonicus, Moraw.
argutoroïdes, n. sp.
platynotus, n. sp.
chalcentus, n. sp.
tinctulus, n. sp.
relucens, n. sp.
rubefactus, n. sp.
discrepans, Moraw.
fuliginosus, Dufts.
zabroides, Dej.
lucidus, Moraw.
Tachycellus anchomenoïdes, n. sp.
grandiceps, n. sp.
Bradycellus læticolor, n. sp.
fimbriatus, n. sp.
Trichotichnus longitarsis, Moraw.
Acupalpus inornatus, n. sp.
Anoplogenius circumcinctus, Motsch
Stenolophus propinquus, Moraw.
castaneipennis, n. sp.
proximus, Dej.
chalceus, n. sp.
quinque-pustulatus, Wiedm.
Platymetopus corrosus, n. sp.

Subfam. ANCHOMENINÆ.

Pristonychus æneolus, n. sp.
Dolichus flavicornis, F.
callitheres, n. sp.
Crepidactyla nitida, Motsch.
Pristodactyla cyclodera, n. sp.
dulcigrada, n. sp.
arcuaticollis, Motsch.
Taphria congrua, Moraw.
crassipalpis, n. sp.
Colpodes atricomes, n. sp.
splendens, Moraw.
lampros, n. sp.
modestior, n. sp.
sylphis, n. sp.
Japonicus, Moraw.
Dicranoncus femoralis, Chaud.
Anchomenus protensus, Moraw.
magnus, n. sp.
leucopus, n. sp.
daimio, n. sp.
chalcomus, n. sp.
impressus, Panz.
quadripunctutus, DeGeer.
Orthotrichus cymindoïdes, Dej.

Subfam. Trechichinæ.

Trechichus Japonicus, n. sp.
Pentoplogenius exiguus, Moraw.

Subfam. Abacetinæ.

Abacetus leucotelus, n. sp.

Subfam. Drimostominæ.

Stomonaxus striaticollis, Dej.
platynotus, n. sp.

Subfam. Trigonotominæ.

Trigonotoma Lewisii, n. sp.
Triplogenius ingens, Moraw.
euprescens, Motsch.

Subfam. Pterostichinæ.

Pœcilus planicollis, Motsch.
lepidus, Moraw.
Pterostichus sulcitarsis, Moraw.
microcephalus, Motsch.
procephalus, n. sp.
subæneus, Motsch.
neglectus, Moraw.
longinquus, n. sp.
prolongatus, Moraw.
Noguchii, n. sp.
fortis, Moraw.
rotundangulus, Moraw.
thorectes, n. sp.
Japonicus, Motsch.
subovatus, Motsch.
orientalis, Motsch.
tropidurus, n. sp.
Thunbergi, Moraw.
sphodriformis, n. sp.
Yoritomus, n. sp.
Curtonotus gigantcus, Motsch.
niteus, Putz.
Hiogoensis, n. sp.
Bradytus ampliatus, n. sp.
simplicidens, Moraw.
Amara chalcophæa, n. sp.
laticarpus, n. sp.
chalcites, Zimm.
obscuripes, n. sp.

Subfam. Patrobinæ.

Patrobus flavipes, Motsch.
Diplous caligatus, n. sp.

Subfam. Trechinæ.

Trechus postilenatus, n. sp.
ephippiatus, n. sp.
Perileptus Japonicus, n. sp.

Subfam. Bembidiinæ.

Tachys exaratus, n. sp.
pallescens, n. sp.
sericans, n. sp.
Tachys triangularis, Nietn.
lætificus, n. sp.
fuscicauda, n. sp.
perlutus, n. sp.
Tachyta microscopica, n. sp.
Tachypus semilucidus, Motsch.
Bembidium stenoderum, n. sp.
niloticum, Dej.
cognatum, Moraw.
lunatum, Dufts.
consummatum, n. sp.
Hiogoense, n. sp.
lissonotum, n. sp.

Subfam. Odacanthinæ.

Ophionea cyanocephala, F.
Casnonia flavicauda, n. sp.

Subfam. Galeritinæ.

Drypta lineola, Dej.
Galerita Japonica, n. sp.
Planetes bimaculatus, Macleay.

Subfam. Brachininæ.

Pheropsophus Jessoensis, Moraw.
Brachinus scotomedes, Redtenb.
stenoderus, n. sp.
incomptus, n. sp.
Lewisii, n. sp.
Crepidogaster bicolor, Bohem.

Subfam. Masoreinæ.

Masoreus adelioides, Macleay.

Subfam. Dromiinæ.

Dromius quadraticollis, Moraw.
optimus, n. sp.
Apristus striatus, Motsch.
rufiscapis, n. sp.
secticollis, n. sp.
cuprascens, n. sp.

Subfam. Cymindinæ.

Cymindis pictula, n. sp.
rivularis, Motsch.
daimio, n. sp.

Subfam. Calleidinæ.

Endynomena Lewisii, n. sp.
Paraphæa (n. g.) signifera, n. sp.
Bothynoptera perforata, n. sp.
tripunctata, n. sp.
Taicona (n. g.) aurata, n. sp.
Crossoglossa latecincta, n. sp.
monostigma, n. sp.
cavipennis, n. sp.
læsipennis, n. sp.
Calleida lepida, Redtenb.
onoha, n. sp.

Subfam. GALERUCIDIINÆ.

Lebidia octoguttata, Moraw.
bioculata, Moraw.

Subfam. LEBIINÆ.

Dictya cribricollis, Moraw.
Lebia Japonica, Chaud.
fusca, Moraw.
Idæ, n. sp.
sandaligera, n. sp.
bifenestrata, Moraw.
Lebia comitata, n. sp.
crux-minor, L.

Subfam. PENTAGONICINÆ.

Pentagonica ruficollis, Schmidt-Goebel.
nigripennis, n. sp.
subcordicollis, n. sp.

Subfam. COPTODERINÆ.

Amphimenes (n. g.) piceolus, n. sp.

Fam. CICINDELIDÆ.

Cicindela Chinensis, DeGeer, Ins. 4, t. 17, f. 23; Olivier, Entom. 33, p. 9, pl. 2, f. 20.
Japonica, Thunb. Nov. Sp. Ins. Diss. i. p. 25, t. 1, f. 39.

This handsome and well-known *Cicindela*, according to Mr. Lewis's notes, is abundant everywhere in Japan; frequenting the neighbourhood of water, especially running streams, March to November. It is common also in China, from Hong Kong to the Yang-tsze. I have seen it stated that the Japanese specimens form a variety, distinct from the Chinese; this may be true as regards those found at Hong Kong, which are bluer in colour, and have less of the coppery tinge on the thorax and the base and apex of the elytra; but specimens from Ningpo do not differ in these respects from those of Nagasaki.

Cicindela Japonica, Guérin-Méneville, Revue Zool., 1847, p. 2.
Japana, Motschulsky, Etudes Entom., 1857, p. 108.
æneo-opaca, id. l. c., 1860, p. 5.

Also a well-known species, somewhat resembling the European *C. sylvatica* (which extends its range into Eastern Siberia), but differing greatly in the shape and colour of the labrum, which is white, and scarcely produced in the middle.

Found in the dry season (February to June) abundantly on hill sides and in woods, everywhere.

C. Japanensis, Chaudoir, Bulletin d. l. Soc. Imp. des Naturalistes de Moscou, 1863, p. 2.

Considered by Chaudoir to be a local variety of the common European *C. hybrida*, and defined in these terms:—

"Inter minores, colore cum typo convenit, suprà

tamen paulo obscurior, lunulâ humerali late interruptâ, fasciâ mediâ minime marginatâ, longius descendente, obliquâ, medio attenuatâ, lunulâ apicali tenui."

The reason which induces Baron Chaudoir to consider the Japanese insect as a local form of the widely-spread *C. hybrida* is apparently the existence of a numerous series of connecting varieties, found throughout the Northern Hemisphere of the old world along temperate latitudes between Japan and Western Europe. Otherwise, the well-marked and constant differences offered by *C. Japanensis* would probably have led him to consider it a distinct species, and as such I prefer to treat it. It is always smaller than *C. hybrida* (5 to 5½ lines), and of an olive-green colour, with silky cupreous reflections, and with the sides of the breast, and a broad ring round the femora and tibiæ, brilliant coppery. The thorax has similar straight sides, but it is more distinctly narrowed behind. The elytra in the ♀ have each, near the suture, and at a short distance from the base, a rounded dusky depression, which I do not see in *C. hybrida*, or any of its varieties that I have examined. The white belts and spots of the elytra are, in all Mr. Lewis's specimens, as described by Baron Chandoir, viz., the humeral lunule is separated into two distant spots, the submedian fascia is oblique and rather narrow, without dentiform projections or thickened portions, and the apical lunule is very slender in the middle.

Very abundant in the sandy beds of rivers at Osaka and Kobé.

C. Lewisii, n. sp.

Valde elongata, fusco-nigra leviter cuprascens, infrà et pedibus cyaneis, pectoris lateribus aureo-cupreis, cinereo-villosis; elytris subtilissime granulatis, lunulis humerali et apicali, fasciâque medianâ transversali flexuosâ, albis; labro brevissimo, medio haud producto, albo.

Long. 7—7½ lin. ♂ ♀.

The form of the white marks of the elytra in this species is exactly as in the typical form of *C. hybrida;* the shape of the head is also very similar, the eyes being only moderately prominent and the forehead very little depressed. But there the similarity ceases. The labrum in *C. Lewisii* is, in both sexes, remarkably short and broad, with nearly straight anterior edge (subdenticulate in ♀), and much rounded angles. The elytra are greatly elongated, with

nearly parallel sides; the sutural apex spinose in both sexes; they are opake, but rather closely studded with glossy elevated granules, much more minute than those of *C. hybrida* and allied species. The great length of the elytra makes the head and thorax appear relatively short. The maxillary palpi are reddish, with the second joint partly, and the third and fourth wholly, brassy green. The labial palpi are pale testaceous, with the terminal joint only brassy green.

On sandy sea-beach, Sakai, near Osaka.

C. lætescripta, Motschulsky, in Schrenk's Reise im Amurlande, Ins. p. 88, tab. vi. f. 1.

Valde elongata, cyaneo-nigra, elytris elongato-ellipticis, margine lato (lunulis et fasciâ obliquâ mediânâ conjunctis) lineolisque duabus suturalibus albis; capite parvo, thorace cylindrico-ovato, pedibus valde elongatis.

Long. 7—8 lin. ♂ ♀.

Motschulsky gives five lines only as the length of this species, but as his measurements are very frequently erroneous, and his figure accurately represents the present insect in size and markings, I feel no doubt that the determination is correct, especially if we may assume a little inaccuracy in the figure as to the rounding of the shoulders of the elytra, which in our insect are very distinct, and even produced a little forward. The tibiæ, and even the tarsi in some specimens, are more or less rufous. The white hairs of the flanks of the body beneath are adpressed or subtomentose, as in *C. signata* and other long-legged species, between which and the *cancellata* group this remarkable and elegant species must be placed.

Mr. Lewis found it in the sandy beds of rivers near Kawachi. Motschulsky records it as having been taken at various places along the banks of the Amur and Usuri by MM. Schrenk and Ditmar, and Madame Gachkevich, and also at Dolé and Kidsi. His correspondents, however, did not meet with it in Japan.

C. Amurensis, Morawitz, Bulletin de l'Acad. Imp. des Sciences de St. Petersburg, 1863, p. 238.
C. Elisæ, Motsch. Bull. Moscou, 1859, ii. p. 487?

"Viridi-ænea, subtus lateribus albo-villosa, capite inter antennas profundius striolato, prothorace longiusculo, tere-

tiusculo, lateribus hirsuto; elytris punctatis, lunulâ humerali apicalique dentatis fasciâque ante medium bilunatâ tenuibus, albis.

Long. $8\frac{1}{2}$—$9\frac{1}{2}$ millim.

♂ Elytris oblique truncatis, angulo suturali prominulo.

♀ Elytris oblique truncatis, apiceque rotundatis."

(Moraw.)

As Morawitz rightly observes, this species belongs to the same group as *C. trisignata* of Europe. In fact, it differs no more from *C. trisignata* than *C. Japanensis* does from *C. hybrida*. It is a little smaller and less coppery in colour, and the white markings of the elytra are narrower, and more sharply limited.

Osaka; sandy places in August. Mr. Lewis also captured the species abundantly on the shores of lakes at Kiu-Kiang, on the Yang-tsze, in China; and I have a specimen taken by Mr. Arthur Adams, on the coast of Manchuria. According to Morawitz, it was met with by Maack and Radde on the Amur and Usuri rivers.

C. Elisæ of Motschulsky may, perhaps, belong to the same species; but if so, he has given not merely an insufficient but a false description, so that his name cannot be adopted.

C. speculifera, Chevrolat, Revue Zool., 1845, p. 97.

Named from the small, mirror-like spot on the anterior part of the disk of each elytron in the ♀; a character in which it agrees with numerous other species more or less closely allied to it. Japanese specimens do not differ in the slightest from those of Hong Kong. In size they vary from six to seven lines in length, which is much larger than the Indian species *C. undulata*, Dej. ($4\frac{1}{2}$ lines), with which it is united in Gemminger and Harold's Catalogue.

It is found in Japan only during the summer rains in August, in moist paddy-fields and on roads. Hiogo, Nagasaki.

C. gracilis, Pallas, It. ii., p. 724; Dej. Sp. Gen. i. 139.

Of this well-known Siberian species, allied to the European *C. germanica*, Mr. Lewis obtained only one specimen, at Ipongi, near Nagasaki, in August.

Fam. CARABIDÆ.

Division I. *Epimera mesothoracica coxas attingentia.*

Subfam. Omophroninæ.

Omophron æqualis, Morawitz, Beitrag zur Käferfauna der Ins. Jesso, p. 6.

Hiogo; in a sandy river bed. An examination of five specimens taken by Mr. Lewis shows that the characters relied on by Morawitz to distinguish this species from the European *O. limbatus* are not constant. Thus the fourteenth and fifteenth elytral striæ are sometimes confluent long before the apex, as is generally seen in *O. limbatus*, and the twelfth stria is abbreviated only in one example. I find, however, *O. limbatus* varies in these points. The only differences between the two forms that I observe are size (*O. æqualis* being $3\frac{1}{6}$ lines long) and the distinctly straighter lateral margins of the thorax in *O. æqualis*, with much more produced and less deflexed anterior angles.

Subfam. Carabinæ.

Cychrus convexus, Moraw. Beitr. z. Käferf. Ins. Jesso, p. 7, t. 1, f. 2.

Hakodadi. Mr. Lewis did not obtain this species, which is described by Morawitz as very distinct in its very convex elytra, with lateral keel visible from above only at the shoulders. Its colour is brassy black, with cordate thorax and strongly granulated, triseriate-tuberculate elytra; $15\frac{1}{2}$ millimetres long.

Damaster blaptoïdes, Kollar, Ann. Wien. Mus. i. 1836, p. 334, t. 31, f. 1; Lacordaire, Genera des Col. Atlas, t. 2, f. 2.

The famous *Damaster blaptoïdes* was met with by Mr. Lewis only in "deep peaty woods, in the granitic district," near Nagasaki. All specimens of *Damaster* found elsewhere in Japan differ more or less from this, which is the largest form. The size of the specimens brought home varies from 1 in. 8 lines to 2 in. 5 lines (including the elytral mucro). Besides the larger average size, this species is distinguished from the allied forms by the much longer elytral mucro, which in some males measures a quarter of an inch in length.

D. Lewisii, Rye, Entom. Monthly Mag. Novem. 1872, p. 131.

"*D. blaptoïdi* proxime affinis; staturâ minore, pedibus comparatim brevioribus, thoracis lineâ lævi medianâ longitudinali nullâ vel obsoletâ, elytrorum apicibus multo minus productis, discedens." Rye, l. c.

Found at Simabara, I. Kushiu, and Hiogo, in Nipon; both sandy districts.

The differences between this form and *D. blaptoïdes* are very slight, and I scarcely recognize in Mr. Lewis's specimens the distinguishing characters drawn by Mr. Rye from the longitudinal line of the thorax and the legs. The Japanese themselves, however, distinguish the two forms, and when a long series of specimens of each are compared, the smaller size, more slender figure and shorter mucro of *D. Lewisii* are sufficiently conspicuous. In size it varies from 1 in. 6 lin. to 1 in. 8 lin.

D. Fortunei, A. Adams, Ann. & Mag. Nat. Hist. 1861, p. 59.

Island of Awa-Sima, off the N. E. Coast of Nipon.

Distinguished from the *D. Fortunei* described by Schaum, by the coppery colour of the head and thorax, the latter of which is more strongly transverse-rugose. I have examined both sexes and find the differences constant.

Mr. Adams has recently informed Mr. Lewis that it was on Tabu-Sima that he collected his specimens of this insect. The difference of locality is not very material, as the two islands are on the same coast, not many miles distant from each other.

D. pandurus, n. sp.

D. Fortunei, Schaum, Ann. Soc. Ent. Fr. 1862, p. 68, t. 2, f. 1.

Yokohama.

This species has been received in great abundance from Yokohama and the S. E. part of Nipon. In a large series which I have had an opportunity of inspecting the deep blue-black colour of the whole upper surface is constant. Mr. Lewis never met with it in the Island of Kushiu, which is the head-quarters of *D. blaptoïdes*. It is at once distinguished by its shorter thorax, dilated in the middle, and short, sometimes scarcely prominent elytral mucrones.

D. rugipennis, Motsch. Etud. Entom. x. p. 6.
D. auricollis, C. Waterhouse, Trans. Ent. Soc. Ser. 3, vol. 5, p. 569.
Carabus (*Coptolabrus*) *rugipennis*, Morawitz, Beitr. etc., p. 8, t. 1, f. 3.

Hakodadi. Not in Mr. Lewis's collection. The facies and shape of this elegant species are those of *Damaster*, but the dilated tarsi of the ♂ connect it with *Carabus*, especially with the *Coptolabrus* group. The degree of dilatation, however, is very slight, very different to what exists in *Coptolabrus*.

Carabus DeHaanii, Chaudoir, Bull. Mosc. 1848, iv. p. 452.

Among the numerous described species from Japan and North China belonging to the *C. prodigus* group, the present is distinguished by its large size (15 to 18 lines), *blueish-black* colour, impunctate striæ of the elytra, and the presence of a fourth distinct "chain stria" towards the lateral margin of each elytron, beyond which there is a broad rugose space and indications of other striæ. All the numerous examples I have seen of the two sexes agree in these features. The general form of the insect is broad, and only moderately convex; the thorax approaches the cordate shape, that is, its widest part is before the middle, whence it narrows moderately, in a slightly incurved line to the hind angles. All the specimens agree in colour; deep black, with a blueish tinge most perceptible on the sides of the thorax and the elytra.

Heaths and woods, generally distributed.

Var. *punctato-striatus*. In two of Mr. Lewis's specimens the interstices of the elytra are distinctly crenated, the indentations increasing in strength towards the apex. In the absence of other differences I do not venture to separate them specifically.

C. Yaconinus, n. sp.

C. DeHaanii paululum minor et angustior, suprà fusco-cupreus, vix nitidus; thorace subcordato, suprà rugoso-punctato, elytris conspicue crenato-striatis, striâ catenulatâ 4ta obsoletâ; margine confuse granulato-rugoso.

Long. 13—14 lin. ♂ ♀.

Rather narrower than *DeHaanii* in both sexes, and distinguishable from the crenate-striate form of that species by the absence of the fourth (lateral) chain-stria, this being

replaced by an indistinct row of small granules. The colour of 7 specimens out of the 8 before me is dark brownish-coppery, with the surface much less shining than in *DeHaanii;* the 8th is blueish-black with cyaneous margins. There is scarcely any difference in the form or sculpture of the thorax. I can hardly think it to be a variety of *DeHaanii*. A distinguishing character of *C. Yaconinus* is furnished by the three interstices exterior to the 3rd chain-stria, which are so strongly crenated as to be with difficulty traceable.

Nagasaki and Hiogo.

C. insulicola, Chaudoir, Rev. & Mag. Zool. 1869.

Yokohama. Not met with by Mr. Lewis.

Very closely allied to *C. Yaconinus*, but undoubtedly distinct as a species. It has relatively much longer and less oval elytra, with the striæ and interstices much less sharply cut, thus receding from the well-marked type of sculpture offered by *C. prodigus*. The striæ are regularly and rather coarsely punctured, but the interstices are not so crenated towards the margins and apex as in *C. Yaconinus*, consequently the 3 costæ exterior to the 3rd chain-stria are much more distinct, and the central interstices extend to the apex. The 4th chain-stria is reduced to a row of granules. The colour of some dozens of examples that I have seen is light brassy-green, chiefly on the interstices and margin; very rarely it is violet-black with green margins.

C. Maiyasanus, n. sp.

Angustior, æneo-cupreus, nitidus; thorace angustior, ante medium minus dilatato; elytris conspicue crenato-striatis, striâ catenulatâ 4ta obsoletâ, margine exteriori lineatim-granulatâ; tibiis et tarsis picco-rufis.

Long. 10½—12 lin. ♂ ♀.

Found only at Moon-temple (Maiyasan), Kobé; alt. 2,000 feet.

Of more elongated and narrower form than either of the preceding, and constantly smaller; colour always bright æneous-coppery, with the tibiæ and tarsi reddish. The thorax is narrower; its broadest part is a little before the middle, narrowing a little anteriorly and much more so posteriorly, yet less cordate than in *C. DeHaanii;* sculptured nearly the same, but punctures rather denser. The elytra bear the same proportion to the head and thorax as

in *DeHaanii* and *Yaconinus*, and have not the relative greater length which is seen in *insulicola;* the 4th chain-stria is reduced to a distinct row of granules, but the exterior marginal granulation takes the form of definite longitudinal lines; the dorsal striæ are continuous to the apex.

I have examined more than a dozen examples, without finding much variation.

C. Albrechti, Morawitz, Bull. Acad. St. Petersb. v. (1863), 321, 1; id. Beitr. Käferfauna Ins. Jesso, p. 10, t. 1, f. 4 (1863).

"Supra subcupreus, vertice lævi, prothoracis lateribus rotundato, ante angulos posticos sinuato, basi arcuatim emarginato; elytris profunde et regulariter striatis, interstitiis angustis, convexis, 4te, 8vo et 12mo catenatis. 22—22½ millim." Moraw, l. c.

In most of the examples of this species, two characters are observable which distinguish it from its allies; 1, the thorax broadest in the middle; and 2, the impunctate striæ of the elytra. Examples however occur in which the thorax is broadest before the middle, and the striæ distinctly crenated; thus a satisfactory diagnosis is not possible. It varies also in colour, sometimes being "subcupreus," but generally blueish-black, like *C. DeHaanii*, some examples being brassy-cupreous, as bright as *C. Maiyasanus;* but I have seen no specimen coloured like *C. insulicola*. The sculpture of the elytra in the punctured examples differs from that of *C. Maiyasanus* only in the punctures not being visible in the bottom of the striæ, but only as crenulations on the sides of the interstices.

Morawitz's three specimens came from Hakodadi. I have a specimen taken also at Hakodadi, agreeing exactly as to form and sculpture with his description, but of a blueish-black colour, and agreeing still closer with Chaudoir's description of his *C. striatus* from the north of China. Mr. Lewis found cupreous and blue-black examples with simple and crenated striæ at Nagasaki. The *Japonicus* of Motschulsky, of which two different and equally insufficient diagnoses were published, seems to agree best with the typical form of *Albrechti*, although his figure represents the thorax as broadest in front; his *corvinus* is undoubtedly a blue-black variety of the same with crenated striæ, and his *multistriatus* a more strongly punctured variety.

The only species here described with which *C. Albrechti* may be confounded is *C. Yaconinus*, which is, however, always larger, with thorax much more narrowed behind than before, and striæ much more conspicuously punctured. *C. Maiyasanus* is sometimes precisely similar to *Albrechti* in form (even of the thorax) and in colour, but the red tibiæ and tarsi amply distinguish it.

The synonymy of the species is as follows:—

C. Albrechti, Moraw. l. c. (1862).

C. Japonicus, Motschulsky, Etudes. Entom. 1857, p. 111, pl. 1. f. 7 (description worthless); id. Bull. Mosc. 1865, 4, p. 282.

C. striatus, Chaud. Rev. & Mag. Zool. 1869 (January), p. 4.

Var. *C. corvinus*, Motsch. Bull. Mosc. 1865, 4, p. 282 (Nagasaki).

C. multistriatus, id. p. 283 (Hakodadi).

The prior name of *Japonicus* is not adopted, in the doubt that it may refer to some other allied species.

It is probable that other forms of *Carabus* will yet be found in unexplored parts of Japan, which may bridge over the slight differences existing between the four species above described.

C. procerulus, Chaud. Rev. & Mag. Zool. 1862, p. 486. Yokohama.

C. granulatus, Linn. Faun. Suec. n. 781.

Var. *dauricus*, Mannerh.

Yesso. Not met with by Mr. Lewis in the Southern Islands.

C. tuberculatus, Fischer, Entom. d. l. Russie, iii. p. 186, t. 7 c, f. 1; *tuberculosus*, Dej. Sp. Gen. v. p. 549; *granosus*, Chaud. Bull. Mosc. 1844, iii. p. 437.

Generally distributed on mountains in Japan. I find no difference between Japanese specimens and those from Eastern Siberia.

Calosoma Maximowiczi, Morawitz, Beitr. z. Käferfauna Ins. Jesso, p. 20, t. 1, f. 7.

"Suprà obscure viridi-ænea, prothorace lateribus valde rotundato, postice subangustato, sed non coarctato; elytris punctato-striatis, interstitiis transversim imbricato-rugosis,

4to, 8vo et 12mo foveolis seriatis impressis. ♀ 27 millim." Moraw. l. c.

Morawitz adds that the insect is notably more slender than *C. sycophanta*, the thorax especially narrower, and the elytra less broad at the shoulders. The sides and foveolæ of elytra with a bright greenish tinge.

Found between Skabi and Ssawara.

C. mikado, n. sp.

C. cyanescens, Motsch. Bull. Mosc. 1859, iv. p. 489 ?

C. sycophanta multo angustior, nigrum, marginibus obscure cyaneum; thorace parvo, lateribus æqualiter rotundato, angulis posticis productis, deflexis, acutis; elytris punctato-striatis, interstitiis vix elevatis, transversim imbricato-rugosis, 4to, 8vo et 12mo foveolis concoloribus impressis; tibiis ♂ rectis.

Long. 11 lin. (23 millim.), ♂.

A single ♂ found at Hiogo (on a chestnut tree), and differing from *C. Maximowiczi*, apparently solely in colour, and especially the non-metallic elytral foveolæ. Motschulsky describes his *C. cyanescens* (from the Amur) as having the thorax cordate, and the interstices of the elytra "angustis, valde elevatis," apparently without transverse, imbricate striæ. Moreover, the length is given as 8 lines only.

Nebria livida, Linn. Syst. Nat. i. 2, p. 670.

Hiogo and Osaka.

I see no difference between Japanese specimens and others from Eastern Siberia, both being larger (8 lines) than European specimens. In some Japanese specimens the lateral pale border is a half or a whole interstice narrower than in others.

Nebria macrogona, n. sp.

N. livida affinis, multo major; piceo-nigra, palpis, antennis, pedibus apiceque elytrorum fulvo-testaceis, mandibulis rufo-piceis; thorace magis elongato, lateribus antice modice dilatato ibique fortiter angulato, angulis anticis productis, posticis extus prominulis dentiformibus; elytris punctato-striatis, interstitio 3^io^ punctis majoribus quinque.

Long. 8½—10 lin. ♂ ♀.

Hiogo and Kawachi; abundant.

This fine *Nebria* is one of the largest of the genus. Its nearest affinity is with *N. livida*, from which it differs in

the much more elongated elytra, longer and less dilated thorax, with prominent lateral angles, and in colour. The head is very similar, not narrowed behind the eyes. The thorax is longer; the anterior angles are much produced, and stand away from the sides of the neck; the margin from the angle is not rounded, but straight or even incurved, and the posterior narrowing is much more gradual. The pale marks of the elytra are confined to a narrow, inconspicuous patch on each side at the apex, which continues for some distance along the extreme lateral edge.

Nebria pulcherrima, n. sp.

Flavo-testacea nitida, elytris utrinque mox pone medium plagâ rotundatâ nigrâ.

Long. $5\frac{1}{2}$ lin. ♂.

Hiogo.

Head and thorax much narrower than the elytra, the latter rather short and broad for this genus, deeply striate; the striæ regularly punctured, destitute of large punctures on the 3rd interstice. The head is smooth; the eyes large and prominent. The thorax is half the width of the elytra, and cordiform, moderately rounded before the middle, narrowing somewhat gradually to the rather prominent anterior angles, and much more considerably, sinuately, narrowed behind to the very sharp and somewhat produced hind angles; the disk is smooth, and the depressed borders obscurely punctate-rugose. The elytra are broad, but rounded at the shoulders.

Mr. Lewis took several specimens of this handsome species also in China, on the margins of a lake at Kiu-Kiang, Yang-tsze. These are smaller than the Japanese ($4\frac{1}{3}$ lines). The nearest ally to the species is the *N. xanthacra* of Northern India.

N. Chinensis, Bates, Entom. Monthly Mag. Aug. 1872, p. 52.

"Elongata, picco-nigra, antennis, palpis pedibusque rufo-piceis; capite parvo, oculis valde prominentibus; thorace transversim quadrato, postice gradatim leviter angustato; elytris oblongo-parallelis, acute punctato-striatis, interstitiis omnino crebre punctulatis, 3to 4-punctato."

Long. $6\frac{1}{2}$ lin. l. c.

Nagasaki. (China, on the banks of the Yang-tsze, widely distributed.)

Japanese specimens have the legs darker, dark pitchy, with femora sometimes black, and the elytral interstices not punctured, except towards the sides of the elytra. But in a series of specimens taken by Mr. Lewis at Kiu-Kiang on the Yang-tsze, I find all gradations, though none in which the punctuation entirely fails. The peculiar form of the thorax at once distinguishes the species, in all its varieties; it is much more nearly square than in any of its near congeners, dilated very slightly at one-third the length, and thence very gradually, straightly and moderately narrowed to the base; the hind angles are rectangular and somewhat raised.

Subfam. Ozæninæ.

Eustra plagiata, Schmidt-Goebel, Faun. Col. Birmaniæ, p. 66; Chaud. Ann. Soc. Ent. Belg. t. xi. (Revis. Ozén. p. 31).

Nagasaki, at roots of large trees and in moss.

I believe this is the most northern locality in which a species of the singular group *Ozæninæ* has been found. The subfamily may be always recognized by the curious break, or fold, in the lateral margin of the elytra, near the apex. *Eustra* is distinguished as a genus by its acuminated palpi. The Japanese specimens agree precisely with Schmidt-Goebel's excellent description, and it is singular that the species should not yet have been found in any intermediate locality between Birmah and Japan.

Subfam. Scaritinæ.

Scarites aterrimus, Moraw. Beitr. z. Käferf. Ins. Jesso, p. 21, t. 1, f. 8.

Hiogo and Simabara, on sandy beaches; also Hakodadi and the coast of Manchuria.

A species distinguished by its rather short, broad form, the dilated and rectangular head in front of the eyes, and the broad thorax, with the anterior margin deeply arcuate-emarginate, and anterior angles much produced. The dentiform process at hind angles of the thorax is scarcely perceptible, and the elytra are strongly striated, with the striæ faintly crenated. The exterior edge of the middle tibiæ have only one spine. Out of fourteen specimens only two present the two posterior dorsal punctures of the elytra, described by Morawitz; the rest are impunctate.

Scarites pacificus, n. sp.

S. arenario proxime affinis, differt elytris simpliciter striatis, capite minus striato, vix punctato. Elongatus, subcylindricus, niger, nitidus; capite plus minusve grosse striato; thorace quadrato, quàm in *S. arenario* paulo longiori, impunctato, basi haud granulato; elytris elongatis subparallelis, basi utrinque fortiter arcuato, valde striatis striis simplicibus, punctis posticis dorsalibus duobus. Tibiæ anticæ suprà dentes bidenticulatæ; intermediæ unispinosæ.

Long. 8—9 lin.

So closely allied to the common Mediterranean *S. arenarius*, that it can scarcely be considered as more than a local variety of it, especially as in some examples traces of punctures may be seen in the bottom of the striæ. I should have considered it to be the *acutidens*, Chaud., of Chusan, had not the author described the middle tibiæ as having two spines.

Apparently common in Japan, Hiogo, Nagasaki, on clayey soils. I possess a specimen also from the island of Formosa, taken by Mr. Consul Swinhoe.

Clivina lata, Putzeys, Revis. Gén. des Clivinides, p. 131.

Nigerrima nitida, antennis pedibusque piceis, palpis rufo-testaceis; capite parvo, lævissimo, epistomate late sinuato-truncato, sulco angusto ab fronte separato; occipite sulco transverso acuto punctato; thorace convexo, antice gradatim angustato, lævissimo; elytris valde elongatis subparallelis, fortiter punctato-striatis, striâ marginali circa humerum ductâ; femoribus anticis crassis haud dentatis, tibiis anticis extus longe tridentatis et dente obtusissimo superiori; intermediis extus fortiter unispinosis.

Long. 4 lin.

Nagasaki; taken also by Mr. Lewis at Kiu-Kiang, on the Yang-tsze, widely distributed; Rangoon, Neilgherries, Bombay.

I have compared the Japanese and Chinese specimens with one from India, named by M. Putzeys, and find no difference. The species may be known by its large size, and its deep and polished black colour.

Clivina humilis, Morawitz, Beitr. z. Käferfaun. Ins. Jesso, p. 22.
vulgivaga, Bohem. Eugen. Resa, Entom. p. 9?

Simabara, Tango. Taken also at Kiu-Kiang, on the Yang-tsze; Yesso (Morawitz).

This species is closely allied to the common European *C. fossor*. It is, however, sufficiently distinct, having the elytra conspicuously longer in proportion to the breadth; the 3rd antennal joint much longer than the 4th, and the tibial teeth of the anterior legs longer, especially the uppermost. In colour it is generally chestnut-red; but the disk of the elytra is often of a darker or blackish hue. The description of *vulgivaga* by Boheman is so vague that it is impossible to determine whether it applies to this species or not.

Clivina Niponensis, n. sp.

C. lernææ affinissima. Elongato-oblonga, vix convexa, nigro-picea, antennis, palpis pedibusque picco-rufis; capite sulcis duobus validis transversis, epistomate antice rotundato; thorace subtiliter omnino transversim rugoso; elytris elongato-ovatis, fortiter punctato-striatis, striâ marginali circa humerum ductâ, interstitio 3^io^ quadripunctato; tibiis anticis dentis longissimis, intermediis extus tuberculatis setiferis, sine spinâ elongatâ.

Long. $2\frac{1}{3}$ lin.

Hiogo; also found at Kiu-Kiang, on the Yang-tsze.

I can detect no marked difference between this species and specimens of *C. lernæa* from Syria, except in the front edge of the epistome being rounded instead of sinuate-truncate. The insect, however, is decidedly shorter, especially in the elytra. The sculpture of the head is similar to that of *lernæa* and many allied species, separated by Putzeys in diverse groups. The punctured occipital groove runs across from the back of the eyes, and its frontal edge is much raised. From the extremities of this groove run two oblique, longitudinal grooves (with their inner edges sharply raised), which end (without meeting) at the transverse groove, separating the epistome from the forehead. The sides of the neck are thickly and coarsely punctured.

Dyschirius cheloscelis, n. sp.

D. nitido affinis. Elongato-oblongus, læte æneus nitidus, antennis pedibusque rufo-piceis; thorace subovato; elytris elongato-ovatis, usque ad apicem striatis, striis (apice excepto) punctatis, marginali ad humerum desinenti; tibiis anticis edentatis spinâ apicali longissimâ, intus et retrorsum valde curvatâ.

Long. $1\frac{3}{6}$—2 lin.

Nagasaki.

Closely allied to the European *D. nitidus*. The antennæ are wholly rufous like the palpi. The thorax is, as in *D. nitidus*, broadest behind the middle, with a deep central furrow, and striated anterior margin. The sutural and second striæ of the elytra are deepened and confluent on the sloping part of the extreme base. The punctures of the striæ are visible almost to the apex. The terminal spine of the tibiæ is longer than the inner spur, and is strongly curved and claw-shaped.

D. Steno, n. sp.

D. filiformi et *bacillo* affinis; cylindricus, angustus, nigro-æneus, antennis (basi rufo-testaceo excepto) palpis pedibusque rufo-piceis; lamellâ frontali cum clypei alis transversim rugatis; thorace subovato; elytris striato-punctatis, striâ 1ma et 2^nda^ a foveolâ scutellari incipientibus, 3^ia^—8va basi valde abbreviatis, marginali circa humerum haud ductâ; omnibus apicem fere attingentibus sed multo debilioribus; tibiis anticis spinâ terminali calcari breviori, denticulo inferiori spiniformi.

Long. $1\frac{1}{4}$—$1\frac{2}{3}$ lin.

Osaka. Four examples. Of narrow, cylindrical form. Front of epistome straight, edentate; the epistome itself is smooth, but the plate above it is obscured by transverse rugæ, which extend to the anterior lobes; the crown is smooth. The thorax is rather narrow, quadrate-ovate, with a few conspicuous striæ across the anterior transverse groove. The elytra are not quite cylindrical, but gradually and slightly narrowed to the tip; the striæ are moderately impressed, and marked with short linear punctures: in certain lights they all appear to reach the apex, though becoming faint and retaining their punctures; the first and second striæ dip at the base, and join the prescutellar foveole; the other striæ are obliterated before reaching the base.

D. ordinatus, n. sp.

D. globoso proxime affinis. Nigro-æneus, antennis et palpis basi, pedibusque (femoribus anticis piceis exceptis) testaceo-rufis; thorace subgloboso pone medium latiori; elytris subelongato-ovatis, striis octo fortiter punctatis paulo ante apicem evanescentibus; foveolâ præscutellari insulatâ; interstitio 3^io^ impunctato; tibiis anticis spinâ apicali calcari haud longiori, denticulo inferiori valido spiniformi.

Long. $1\frac{1}{3}$ lin.

Hiogo; Nagasaki (at Tomatsu); many examples.

Closely allied to the common European *D. globosus*, differs in the elytral striæ being distinct nearly to the apex. It is the punctures of the striæ, however, that are the most distinctly visible, and in this the species differs from most of its congeners; the punctures are large, and situated in impressed striæ on the disk, but on the sides and towards the tip are simply arranged in rows. The circular foveole near the scutellum is isolated from the sutural and second striæ. The lower denticulation of the anterior tibiæ is prominent and spiniform.

D. orientalis, Putzeys, Revis. Gén. des Clivin. p. 92.

Nagasaki; Osaka; Hong Kong (Putzeys).

Three examples, agreeing well with Putzeys' description, made from Hong Kong specimens. It is a small ($1\frac{1}{4}$ lin.), short species, with ovate elytra; of a glossy chestnut colour, rather brassy on the elytra, and striæ obliterated before the apex; base of antennæ and legs rufo-testaceous.

D. Hiogoensis, n. sp.

D. orientali proxime affinis, at semper nigro-æneus, pedibus, palpis, basique antennarum rufis, elytris subtilius punctato-striatis. Brevis; capite suprà lævissimo, epistomate valde convexo; thorace transversim quadrato, angulis rotundatis; suprà lævissimo, lineâ dorsali debili; elytris punctato-striatis, punctis distantibus, striis ad trientem apicalem evanescentibus, apice plus minusve rufo-testaceo; striis omnibus prope basin obliteratis, foveolâ præscutellari insulatâ; pedibus omnino clare castaneo-rufis; tibiis anticis spinâ terminali quam calcari breviori, denticulo inferiori brevi, distincto.

Long. $1\frac{1}{4}$ lin.

Hiogo; many examples. The legs, including the anterior femora and all the coxæ, are uniformly clear chestnut-red.

D. daimiellus, n. sp.

D. æneo affinis at multo minor. Oblongus, nigro-æneus; antennis (basi pallidioribus), palpis pedibusque rufo-piceis; capite suprà lævi, fronte et epistomate medio longitudinaliter convexo; thorace rotundato, lævi; elytris oblongis punctato-striatis, striis apicem attingentibus sed ibi debilioribus, suturali ab foveolâ præscutellari incipienti, cæteris basi paulo abbreviatis, marginali circa humerum haud ductâ,

8va multo abbreviatâ et haud impressâ; tibiis anticis spinâ apicali quàm calcari haud longiori, denticulo inferiori acuto.

Long. $1\frac{1}{2}$ lin.

Nagasaki; two examples. Also at Kiu-Kiang on the Yang-tsze.

The middle of the forehead and epistome is longitudinally convex; hence the frontal transverse suture is indistinct in the middle, and vague and wide on the sides. The thorax is rounded, and about as wide as the elytra; quite smooth, with the dorsal line moderately impressed. The elytra are moderately elongated, cylindrico-oblong; the striæ with rather large punctures, becoming fainter near the apex, the three exterior almost obliterated, but the punctures distinct; the sutural stria alone reaches the basal foveole, all the others halt a little short of the base, and the eighth stria is composed only of a line of punctures reaching half-way down the elytron. The legs are pitchy red; the anterior pair darker, with the femora rather brassy. The terminal spine of the anterior tibiæ appears rather shorter than the spur; the lower denticulation is prominent and acute, the upper one very obtuse. The antennæ have the basal joints rufous, and the rest dusky piceous.

D. sphærulifer, n. sp.

D. orientali affinis at differt thorace valde rotundato. Brevis, æneus, partibus oris, antennis pedibusque testaceo-rufis; capite suturâ frontali latâ, lamellâ anteriori elevatâ rotundatâ; thorace transverso maxime rotundato lævi; elytris ovatis, grosse punctato-striatis, striis omnibus (suturali exceptâ) longe ante apicem et prope basin obliteratis, foveolâ præscutellari insulatâ.

Long. 1 lin.

Japan. Two examples (Hiogo).

Distinguished by its strongly-rounded thorax, which shows no trace of the quadrangular form, and is not gradually narrowed (but regularly rounded) anteriorly. The transverse frontal suture and lateral grooves are very wide, so that the anterior plate appears as an isolated prominence. The elytra are short, ovate, and strongly punctate in moderately impressed striæ; none of the striæ reach the base (the sutural apparently not touching the basal foveole), and all are obliterated before the apex as in *D. globosus*. The terminal spine of the anterior tibiæ is, at least, as long as the spur, and the lower denticulation is

prominent and acute. In both specimens the declivous base of the elytra is rufous. The antennæ are rather paler towards the base than in the apical part; the legs are reddish-testaceous.

Division II. *Epimera mesothoracica coxas haud attingentia.*

Group 1. *Pedunculati.*

Subfam. Broscinæ.

Craspedonotus tibialis, Schaum, Berl. Entom. Zeitschr. 1863, p. 87, t. l., f. 5.

Abundant in sandy places everywhere; inland and on the coast. Mr. Lewis took this remarkable insect also at Foo-chow in China.

Group 2. *Patellimani.*

Subfam. Panagæinæ.

Eudema flavopilosum, Chaud.

Epicosmus id., Chaud. Bull. Mosc. 1861, 4, p. 14.

Japan; Formosa. Also Bengal. Not met with by Mr. Lewis.

A small species (3½ lines), with thorax forming a half-oval, with a reddish spot at the hind angles; antennæ and feet red, palpi and two squarish spots on each elytron orange-tawny.

Dischissus, nov. gen.

Facies *Eudemæ*. Caput ut in gen. *Panagæo*, antice obtusum; oculi valde prominentes; collo constricto. Palpi elongati; articulo terminali ♂ modice securiformi, ♀ obliquiter triangulari, acutissimo. Tarsi omnes articulo 4to bilobo, lobis pedum posticorum minus elongatis acuminatis; antici ♂ haud dilatati. Mentum breve, latum; dente mediano lato, medio impresso, a corpore menti suturâ diviso.

This new genus is formed for the reception of species of *Eudema* which present the striking peculiarity of a bilobed fourth joint to all the tarsi in both sexes. In this character it agrees with *Euschizomerus*, but in that genus the lobes are long and rounded to all the feet, whilst in *Dischissus* the lobes on the hind feet are not so fully developed, being acute, and therefore only to be considered as prolongations of the angles of the fourth joint; in the anterior and

middle feet they form true lobes. The genus differs from *Euschizomerus* also in the broadly-toothed mentum (like *Eudema*), this organ in *Euschizomerus* being without tooth; a suture separates the tooth from the body of the mentum.

In facies the species offer no peculiarity. They are black, with the usual orange spots on the elytra, and oval thorax.

Dischissus mirandus, n. sp.

Elongatus, modice convexus, niger, subopacus, breviter fulvo-pubescens, elytris utrinque maculis transversis dentatis submarginalibus aurantiacis duabus; thorace rhomboideo; tarsis omnibus articulo 4to bilobo.

Long. 8½ lin. ♂ ♀.

Nagasaki; many examples. Generally beaten from trees.

Elongate oblong-oval, dull black, densely clothed with short tawny pubescence. Head very obtuse, eyes prominent, neck constricted. Palpi very long, terminal joint broadly securiform in ♂, narrow and very acutely triangular in the ♀; shining black, as well as the basal part of the antennæ; thorax oval; with middle of the sides rather angular in the ♂, quite rounded in ♀, margin after the angle slightly sinuated; hind angles obtuse, notched; surface coarsely confluent-punctate. Elytra oblong-oval, slightly convex, punctate-striate, interstices not closely but distinctly punctured; each elytron has two transverse orange spots, one extending from the margin below the shoulder to the third stria, and widest on the sixth and marginal interstices, the other near the apex composed of five rather short spots on the fourth to eighth interstices, that on the sixth being a little more advanced than the others. The legs are black.

D. quadrinotatus.

Peronomerus id., Motschulsky, Bull. Mosc. 1864, n. 4, p. 333.

Elongato-ovatus, fusco-niger, thoracis lateribus, maculis elytrorum utrinque duabus subrotundatis pedibusque aurantiaco-fulvis.

Long. 4—4¼ lin. ♂ ♀.

Distributed throughout Kushiu and Nipon; under stones on hill-sides. Many examples.

Although Motschulsky gives only three lines as the

length of his insect and the locality East Indies, I feel no doubt that the species is the same as the Japanese one, his description being (unusually for him) exact and full. But he had no reason whatever for referring it to the genus *Peronomerus*, the essential character of which is the large size and unilobular form of the first tarsal joint of the anterior feet in the ♂. The thorax in *D. quadrinotatus* is suboval, much more narrowed anteriorly than behind, with rather produced hind angles, and yellow lateral border, which is broadish near the base, and narrows to a point before reaching the anterior angle.

Peronomerus nigrinus, n. sp.

P. fumato simillimus, differt tantùm integumento nullomodo ænescenti, pubescentiâque griscâ.

Long. 3½—4 lin. ♂ ♀.

Nagasaki; abundant in May; under stones in Mitsuyama, in May.

Of precisely similar form to the Chinese *P. fumatus*. Thorax very similar, rhomboïdal, with prominent lateral angles and sinuate margin between the angles and the base. Differs in the brownish-black colour of the integument (instead of brassy-black), and griseous instead of fulvous pubescence.

It might more properly be treated as a local variety of *P. fumatus*. A series of more than twenty of each taken by Mr. Lewis, when placed side by side, exhibit the distinctive characters very clearly. *P. æratus* of Dacca, in Bengal, differs only in the narrower and more obtuse angled thorax.

Panagæus Japonicus, Chaudoir, Bull. Mosc. 1861, No. 4, p. 356.
rubripes, Morawitz, Beitr. z. Käferfaun. Ins. Jesso, p. 323, t. 1, f. 14.

Hakodadi. Not met with by Mr. Lewis.

The description by Morawitz agrees closely with that of Chaudoir, and it is not clear why the former came to the conclusion that his species was distinct. It is a large handsome species, nearly half an inch in length, with red legs.

P. singularis, n. sp.

Elongatus, palpis, antennis pedibusque rufis, femoribus apice nigris; capite angustissimo, collo valde elongato haud

constricto, thorace medio valde elongato, subangulato; elytris fasciâ latâ prope basin (suturâ interruptâ) maculâque magnâ prope apicem aurantiacis.

Long. 5 lin. ♂ ♀.

Nagasaki; many examples, under clods at Tagami.

A species distinguished by its very long, narrow head. The eyes are very prominent; the palpi elongated, and the terminal joint rather strongly securiform in both sexes. The thorax is broad, rhomboïdal, a little more narrowed in front than behind, with the hind angles projecting as a stout blunt tooth; the surface (like the head) clothed with very long brown hairs, and coarsely rugose-punctate. The elytra are oblong, as in *P. crux-major*, pubescent, ornamented with orange-coloured spots, very similar to those of *P. crux-major;* but the anterior one is narrowed towards the suture, and the hind one does not reach the side, but lies on the interstices 3—8 only. The elytra are strongly punctate-striate, with convex and finely punctured interstices. The legs, except the coxæ and tips of femora, are bright red; the antennæ are red, clearer on the basal and apical joints.

P. robustus, Morawitz, Beitr. Käferf. Ins. Jesso, p. 30, t. 1, f. 13.

Yesso.

I have not seen any example of this species.

Subfam. Chlæniinæ.

Callistomimus modestus, Schaum, Berl. Ent. Zeit. 1863, p. 85 (*Callistus*).

Id., Chaudoir, Bull. Mosc. 1872, i., p. 382.

amabilis, Redtenbacher, Reise d. Novara, Entom., p. 147 (*Callistus*).

Nagasaki. Also Canton, China. Found in damp, sandy places by margins of streams. Runs very nimbly, and takes readily to the water.

This pretty little species forms part of the new genus *Callistomimus*, Chaudoir, distinguished from *Callistus* by the untoothed mentum, and more pointed, hairy palpi.

Chlænius næviger, Morawitz, Bull. Acad. St. Petersb. 1862, p. 324; Beitr. Käferf. Ins. Jesso, p. 33, t. 1, f. 16.

Nagasaki.

A slender species, with round, subapical yellow spot on

the elytra. Distinguished from its allies by the uniform, fine punctuation of the thorax.

C. hospes, Morawitz, Bull. Acad. St. Petersb. 1862, p. 245; id., Beitr. Käferf. Ins. Jesso, p. 32, t. 1, f. 15.

Nagasaki.

Distinguished from *C. mæviger* by the mixed, finer and larger, punctuation, and wrinkled surface of the thorax.

C. pictus, Chaudoir, Bull. Mosc. 1856, iii., p. 22; *Schoenherri,* Dej. Sp. Gén. v. 626.

Nagasaki. Also Hong Kong. N. India (Chaud.).

Belongs to the group having a large comma-shaped pale spot at the apex of each elytron. It differs from *C. hamifer,* Chaud. (which occurs in Java and the island of Formosa), by its larger size and broader thorax, the sides of which are very regularly arcuated. The upper part of the comma-shaped spot has irregular edges.

C. abstersus, n. sp.

C. picto formâ simillimus, sed differt elytris immaculatis. Elongato-oblongus, capite thoraceque læte viridi-cupreis nitidis; antennis, palpis et pedibus testaceo-rufis; capite subtilissime sparsim punctulato; thorace quadrato lateribus arcuatis, antice plusquam postice angustato, angulis subrotundatis sparsissime grosse punctato; elytris obscure viridis, vel violaceis sericeo-opacis.

Long 6½—7 lin. ♂ ♀.

Nagasaki; many examples.

Belonging in form to the group *hamifer, sagittarius,* &c., but wanting the comma-shaped apical elytral spot characteristic of the group. The antennæ are moderately short, as in that group, with the middle joints slightly dilated; the dense pubescence beginning at the base of the third joint, which is about equal in length to the fourth. The palpi have subcylindrical and squarely truncate terminal joints. The form of the thorax differs from that of *C. pictus* and *hamifer* in being more narrowed anteriorly than posteriorly, but less so than in *C. sagittarius* and *conformis.* Its surface is finely wrinkled, and the basal foveæ are strongly marked. The elytra are slightly dilated posteriorly, pubescent; finely punctate-striate, with minutely punctured interstices, the punctures veiled by the pubescence. Body beneath black, shining and iridescent.

C. aspericollis, n. sp.

C. guttato (Esch.) proxime affinis. Elongatus, æneo-niger, capite cupreo-nitido, thorace elytrisque opacis, palpis, antennarum articulis 3 basalibus, pedibusque rufo-testaceis; thorace breviter ovato, grosse crebre punctato; elytris interstitiis valde convexis, maculâ anteapicali sinuatâ flavâ.

Long. 6 lin. ♂.

Nagasaki; two examples.

Nearest allied to *C. guttatus* (Esch., Philippines) and *punctatus* (Chaud., Australia). Elongate and slender; antennæ long, with middle joints dilated. Terminal joints of the palpi widening a little from base to apex, and squarely truncated. Head shining coppery, with green reflections, rather closely and coarsely punctured, but less densely on the crown. Thorax ovate, all angles obtuse and rounded, surface very densely covered with large punctures tending to become confluent; basal foveæ deep and narrow; the colour is dull bronzed black, nearly opake, but with a greenish tinge on the sides. The elytra are nearly twice the width of the thorax, and nearly three times the length, clothed with very short and dark pubescence; deeply striated with very convex and closely punctured interstices. Before the apex is a transverse yellow spot lying on the 4th—8th interstices, broadest on the 6th. The legs are pale reddish, with a faint dusky spot under the femora at the apex; the antennæ have the 3rd—7th joints dusky.

C. subhamatus, Chaudoir, Bull. Mosc. 1856, iii. p. 211.

Widely distributed in Japan; Yesso, Nagasaki. Taken by Mr. Lewis also at Kiu-Kiang on the Yang-tsze, and by Mr. A. Adams on the coast of Manchuria.

I hesitated for a long time in referring this insect to the *subhamatus* of Chaudoir, on account of his giving the character "antennis articulo tertio villoso;" which I take to mean that the dense pubescence begins with the third joint, which is decidedly not the case. As the species, however, agrees well with the long and excellent description given by the author, I conclude to adopt his name.

C. deliciolus, n. sp.

Elongatus, gracilis; capite viridiæneo nitido, thorace rufo, opaco; elytris nigris opacis, vittâ abbreviatâ mar-

ginali, maculâque suturali ante apicem, rufis; partibus oris, antennis pedibusque testaceo-rufis.

Long. $5\frac{1}{4}$ lin. ♂ ♀.

Nagasaki; many examples.

A beautiful species of the *C. notula* group. Slender, opaque except the head, which is brassy-green, moderately shining and closely punctulated. Palpi long and slender, with the terminal joints not at all dilated, although obliquely truncated. Labrum squarely truncated in front. Thorax quadrate-ovate, rounded at the sides, and more narrowed posteriorly than in front; lateral rims extremely fine; surface very closely punctulate and pubescent, opake. Elytra elongate-ovate, punctate-striate, with finely-rugose, plane interstices, opake and pubescent, sculpture scarcely visible; there is a short tawny-red lateral stripe beginning near the shoulder and ending a little beyond the middle; also a rounded spot over the suture before the apex. The legs are slender and tawny-red. The underside black, highly iridescent and closely punctured.

C. pericallus, Redtenbacher, Reise Novara, Coleopt. t. i. f. 4; *pulcher*, id. p. 10.

Osaka. Also found by Mr. Lewis at Kiu-Kiang, on the Yang-tsze-Kiang.

Hong Kong (Redtenb.).

Another handsome species of the *notula* group.

C. spoliatus, Rossi, Faun. Etr. i. 79.

Var. *nicanus*, Motsch. Bull. Mosc. 1864, 4, p. 346.

Osaka; two examples. Also Kiu-Kiang, China.

No difference is visible between Japanese and European specimens, except that they are a little longer, with faint traces of larger punctures on the thorax, and a coppery coloration of the third and fifth elytral interstices. As these differences are not constant, and are seen in some European specimens, the form cannot be maintained even as a local variety.

C. xanthopleurus, Chaudoir, Bull. Mosc. 1856, iii. p. 230.

Nagasaki. Also Chusan and Hong Kong, and I. Formosa.

C. circumductus, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 246.

Hiogo. Morawitz's specimens came from the R. Usuri,

in Manchuria. I have examples from the Amur, sent by Maack.

Belongs to the *C. vestitus* group; but has a broad, rather square thorax, gradually narrowed in front, and minutely punctulate. The pale border of the elytra is broad, and not sharply defined; the sides of the thorax are also pale.

C. callichloris, n. sp.

C. sobrino (Dej.) proxime affinis, at major. Æneo-viridis; elytris paulo obscurioribus, margine laterali apice valde dilatato ibique dentato testaceo-flavo; palpis, antennis pedibusque testaceo-flavis; subtus nigro-piceo, abdomine rufo-piceo margine late testaceo-rufo; capite lateribus et collo antice grosse punctatis; thorace transversim cordato-quadrato, antice fortiter rotundato, versus apicem subgradatim angustato, angulis anticis haud conspicuis, prope basin fortiter sinuatim angustato, angulis posticis acutis, suprà æqualiter passim punctato.

Long. $4\frac{1}{2}$ lin. ♂ ♀.

Japan. Also at Kiu-Kiang, on the Yang-tsze, China.

The head and thorax are clearer green and shining; the elytra slightly olivaceous and subopake, densely clothed with long, laid pubescence. The thorax is similar in shape to that of the Indian *C. sobrinus*, but the anterior narrowing is rather more gradual, and the anterior angles lie nearer to the sides of the neck, and are less conspicuous; the dorsal line and long basal line on each side are strongly impressed; the punctures are much larger, and the interstices more glossy than in *C. sobrinus*. The elytra are punctate-striate, the interstices nearly plane and very minutely punctured; the yellow border occupies the two marginal interstices, but is much dilated at the apex. The sterna are coarsely, the abdomen very faintly punctured.

C. inops, Chaud. Bull. Mosc. 1856, iii. p. 239; *arcuaticollis*, Motsch. Etudes Entom. 1860, p. 7; *vestitus*, var. Moraw.

Simabara; Osaka; Hiogo. Also Chusan and Kiu-Kiang, China. Korea; Coast of Manchuria; I. Formosa.

Very closely resembling the European *C. vestitus*, differing chiefly in the thorax being broadest near the middle, and narrowing as much anteriorly as behind.

C. culminatus, n. sp.

Ad sect. *Epomis* pertinet. Elongatus, postice dilatatus, omnino breviter pubescens; capite thoraceque læte cupreo-æneis, elytris viridibus subopacis, flavo-marginatis, interstitiis subacute elevatis; antennis, palpis, pedibus abdominisque marginibus flavo-testaceis.

Long. 10—11 lin. ♂ ♀.

Nagasaki, six examples. Also in Che-Kiang, China.

Distinguished from its allies by the fine dark-green colour, and sharply raised interstices of the elytra. The head and thorax are of a rich coppery hue, tinged with golden green. The sides of the forehead and the neck have numerous large punctures, similar to those which are scattered pretty regularly over the thorax; the latter is narrower than usual in this section, with the sides much sinuated posteriorly. The summits of the ridges of the elytra are smooth, the sides of the same have each one row of granulate punctures.

A very closely allied but local form, or species, occurs at Hong Kong.

C. Noguchii, n. sp.

C. chlorophano (Dej.) formâ subsimilis, at thorace angustiori. Elongatus, depressus, obscure æneus, nitidus; antennis articulis 3 basalibus, femoribus tibiisque testaceo-rufis; palpis et tarsis piceis; thorace angusto, quadrato-cordato; elytris utrinque costis septem lævibus.

Long. $6\frac{1}{2}$—7 lin. ♂ ♀.

Kawachi; abundant.

A species distinguished by its depressed form, narrow head and thorax, and costate elytra. The head and thorax are greenish-brassy, shining and nearly smooth, the margins and base of the latter being indistinctly rugulose and punctate. The head has a distinct, slightly constricted neck; the labrum is truncated in front; the terminal joints of the palpi are cylindrical and truncated. The mentum is narrow, with long pointed side lobes and bifid central tooth. The thorax is narrow, gradually rounded from the front angles to one-third the length, then narrowed and sinuated to the hind angles, the latter being produced and acute. The elytra are oblong and depressed, greenish-black, slightly shining, with the furrows and sides cinereous pubescent; they are punctate-striate, with interstices 1—7 (including the suture) elevated and smooth, punctured only on their sides; the two marginal

interstices are plane and closely punctulate. Body beneath black, clothed with fine ashy pile.

Named after Noguchi, Mr. Lewis's meritorious Japanese collector.

C. variicornis, Morawitz, Beitr. Käferfaun. Ins. Jesso, p. 35, t. 1, f. 17.

Elongatus, fortiter convexus; opacus, fulvo-aureo dense pubescens, capite glabro aureo-viridi excepto; antennis articulis 3 basalibus, palpis pedibusque testaceo-rufis; thorace ovato densissime ruguloso-punctulato, obscure æneo; elytris olivaceo-nigris opacis, punctato-striatis, interstitiis planis creberrime punctulatis.

Long. 6 lin. ♂ ♀.

Nagasaki; Hakodadi (Morawitz).

Much longer and more slender than *C. nigricornis*, and with longer antennæ. The head is small and eyes very prominent; it is highly polished, though covered with a fine punctuation, dense only on the neck. The antennæ are very long and tapering, with third joint much longer than any of the rest; they are dull piceous, the second and third and apical joints rather clearer, and the scape red. The thorax is moderately narrow and ovate, its greatest width being a little before the middle, whence it narrows pretty equally to the front and behind; the posterior narrowing is a little sinuated, but the hind angles are obtuse and rounded; the surface is covered very densely with fine punctured rugulæ. The elytra are very convex, and clothed in fine fresh specimens with decumbent golden-tawny pubescence; the punctures of the striæ are very distinct.

C. ocreatus, n. sp.

C. variicorni simillimus; differt thoracis angulis posticis rectis, tarsis nigris, etc. Elongatus, gracilis; nigro-viridis opacus, cinereo-pubescens, capite glabro, cupreo; palpis, femoribus tibiisque rufis; antennis tarsisque nigris, illis scapo rufo; thorace angustiori, quadrato-ovato, angulis posticis rectis.

Long. 5½ lin. ♂ ♀.

Hiogo, Osaka.

Of narrow, elongate form. Head shining coppery or green, faintly punctulate, more densely on the neck. Antennæ long, black, scape red; palpi red, much elongated; labrum and mandibles pitchy-black. Thorax quadrate

subovate; softly rounded on the sides, widest in the middle, rather strongly sinuate behind, with the hind angles rectangular; surface very minutely and densely rugulose. Elytra with well-marked, punctured striæ, interstices minutely punctate-rugulose. Legs red, tarsi black.

C. pallipes, Gebler, Mém. Mosc. vi. 1823, p. 128.
C. corpulentus, Motsch. Etud. Entom. 1860, p. 7.

Hiogo; Awomori; Hakodadi. Also Amur and Lake Baikal.

I have seen a large number of specimens of this species, both from Japan and Eastern Siberia, and like Morawitz have been unable to see any difference between them.

C. præfectus, n. sp.

C. quadricolori affinis, at magis elongatus. Valde elongato-oblongus, brevissime sparsim pubescens; capite thoraceque cupreo-viridibus nitidis, hoc elongato-quadrato sparsim ruguloso et punctato; elytris nigro-æneis limbo viridi, striatis, interstitiis elevatis; antennis, palpis pedibusque rufis.

Long. $7\frac{1}{2}$—9 lin. ♂ ♀.

Nagasaki.

Distinguished among the numerous species of the *C. quadricolor* group by its very elongate and oblong or subparallel form. The head is coarsely but sparsely punctured, and the neck depressed. The thorax is as long as broad, widest in the middle, and equally narrowed before and behind, with the exception that the posterior narrowing is slightly sinuate; the anterior angles are much deflexed towards the sides of the neck, the posterior are obtuse owing to a slight obliquity, near each angle, of the hind margin; the surface is much wrinkled and marked with large scattered punctures. The elytra are elongate and not at all ovate; the faintly punctured striæ lie in deep sulci; the interstices are convex, and very faintly punctured; the dorsal surface is obscure, and the sides green. The underside is wholly black.

C. costiger, Chaudoir, Bull. Mosc. 1856, iii. p. 258.

Nagasaki. Also in China, on the Yang-tsze, and at Hong Kong; I. Formosa.

A fine large species, reaching nearly an inch in length, and having the elytral interstices raised into narrow costæ.

Subfam. Oödidinæ.

Oödes vicarius, n. sp.

Oö. Americano simillimus; differt elytris striis tenuioribus et subtilius punctatis. Late oblongo-ovatus, niger, subnitidus; thorace a basi usque ad apicem lateraliter arcuato et modice angustato; suprà lævi, sericeo-nitenti; elytris thorace paululum angustioribus tenuiter striatis, striis subtilissime punctatis.

Long. 6 lin. ♂ ♀.

Hiogo.

So similar to *O. Americanus* of the Atlantic States of North America, that a minute comparison has revealed no other points of difference than the finer punctate-striæ of the elytra, and the longer and more tapering shape of the dilated third joint of the anterior tarsi in the ♂.

Oö. prolixus, n. sp.

Elongatus, parallelipipedus, niger, nitidus; antennis elongatis, gracilibus; thorace elongato, antice rotundato-angustato, supra lævi; elytris acute striatis, striis vix punctulatis, interstitiis fere planis, 3^io^ bipunctato.

Long. 5 lin.; lat. elytr. $1\frac{3}{4}$ lin.

Hiogo.

A very elongate, parallel-sided species; wholly deep black. The antennæ and palpi are longer and more slender than in *Oö. helopioïdes*. The thorax is a little broader than the elytra at the base, arcuated, elongated, and gradually narrowed to the apex; the upper surface quite smooth, except the fine dorsal line. The elytra are very elongate and parallel, finely striated; the striæ very minutely punctulate, and the interstices quite plane. The third dilated joint of the ♂ fore tarsi is rather narrower and much longer than the second. Beneath the body is shining black, with the sides of the breast and abdomen faintly punctulate. The prosternal process advances as a thick, obtuse wedge beyond the anterior coxæ, and its upper surface has a very fine, well-defined rim.

Oö. vilis, Chaudoir, Bull. Mosc. 1857, iii. p. 32.

Osaka.

A small species ($3\frac{1}{2}$ lines), very much resembling in its

short, oval outline the European *Oö. Hispanicus*, but more completely elliptical, the curve of the thorax being nearly exactly continuous with that of the elytra. The eyes, too, are less prominent, and the prosternal process does not project as a spine, but is wedge-shaped. The dorsal line of the thorax is scarcely visible. As in *Oö. Hispanicus*, the 7th elytral stria is obliterated, except near the apex.

Lachnocrepis Japonicus, n. sp.

Maxime elongatus, angustus, nigro-piceus; palpis, antennis, tibiis et tarsis rufo-piceis; thorace elongato, basi elytris haud latiori angulis obtusis, antice gradatim paululum angustato, lateribus modice arcuatis, elytris punctulato-striatis, interstitiis planis.

Long. 5 lin.; lat. $1\frac{1}{2}$ lin. ♀ ♂.

Nagasaki. Also found by Mr. Lewis at Kiu-Kiang, on the Yang-tsze, in China.

This species is interesting as belonging to a genus hitherto known only as inhabiting the Atlantic States of North America. It is distinguished from *Oödes* by the four basal tarsal joints in both sexes having their soles clothed with a dense brush of soft hairs, and by the 4th joint of the anterior tarsi in the ♂ being dilated. In the Japanese species the three basal joints of the ♂ anterior tarsi are clothed in the middle with erect hair-scales (the so-called *papillæ* of some authors), which I do not detect in the 4th joint, in which soft hairs clothe the sole. I believe this is the case also with the North American species (*L. parallelus*, Say).

L. Japonicus is rather smaller and much narrower than *L. parallelus*, with finer elytral striæ, and more rufous antennæ and legs. The sides of the thorax, especially towards the hind angles, are rufescent-pitchy, as in that species.

Subfam. Licininæ.

Rembus opacus, Chaudoir, Bull. Mosc. 1852, i. p. 67.

Osaka. Three examples, all female. Chusan (Chaudoir).

Long. 6—$7\frac{1}{2}$ lin.

Black, subopake. Abbreviated juxta-scutellar stria present. Striæ fine, but sharp, impunctate; third interstice without punctures. Mandibles much more elongated and pointed than in the allied species.

R. gigas, n. sp.

R. Zeelandicus, Redtenbacher, Reise d. Novara, p. 10, t. 1, f. 5?

R. opaco affinis, at multo major. Elongatus, parum convexus, niger, subopacus; thorace subquadrato, antice et postice fere æqualiter angustato, foveâ utrinque basali sulciformi, angulis posticis obtusis; elytris oblongo-ovatis, marginibus explanatis, fortiter striatis, interstitiis parum convexis haud punctatis, striâ abbreviatâ juxta-scutellari profundâ.

Long. 9—12 lin. ♂ ♀.

Nagasaki; Chusan and Yang-tsze-Kiang, China; I. Formosa.

I have little doubt this not uncommon Chinese insect is the one described and figured by Redtenbacher, with the erroneous locality, *Auckland, New Zealand*, appended to it. The beautiful figure agrees in every respect, except the prominent hind angles, which character is, however, contradicted by the description "die winkel stumpf." The only discrepancy in the description is the heart-shaped labrum, this organ being deeply sinuated, although much less bilobed than in the other species. The species differs from its allies in its longer thorax, widest near the middle, and narrowed quite as much in front as behind. The eyes are not so prominent as in other species, and the edge of the epistome is deeply sinuated. The legs and underside of the body are glossy black, while the upper surface is rendered sericeous-opake by the minute rugosity of the integument. In rare cases the elytral striæ are finely punctulate.

If the species be really found in New Zealand, Redtenbacher's name will stand; but, if not, I presume it will be inadmissible.

R. elongatus, n. sp.

Elongato-oblongus, convexus, niger, nitidus; thorace quadrato, antice angustato, postice paululum sinuato-angustato, angulis posticis valde obtusis; elytris fortiter striatis, interstitiis convexis impunctatis, striâ abbreviatâ juxta-scutellari profundâ.

Long. 12 lin. ♀.

Hiogo; one example. Also at Kiu-Kiang, on the Yang-tsze, in China.

Differs from the ordinary form of the genus in being parallel-sided and very convex. The head is not depressed

on the front, and the epistome is very broadly sinuated, almost straight. The eyes are not so prominent as in *R. Ægyptiacus ;* the mandibles are very broad and obtuse. The labrum is short and deeply notched. The thorax is nearly square, very little rounded anteriorly, narrowed in front, and slightly narrowed, with a distinct sinuation, behind ; but the hind angles are very obtuse. The basal foveæ are deep and broad. There are faint traces of punctures in the bottom of the deeply-sunk striæ of the elytra. The Chinese specimen is less convex and less deeply striated, but offers no well-marked specific difference.

The species seems to connect *Eccoptogenius* (Chaud.) with *Rembus ;* its antennæ and legs being robust, and the anterior tibiæ rather more dilated at the apex, with a comb-like row of short spines on the outer edge. This latter character is seen also, in a somewhat minor degree, in the more robust species of *Rembus.*

Badister pictus, n. sp.

B. bipustulato similis, at magis elongatus. Angustatus, niger, nitidus ; thorace, pedibus, antennarum scapo et palpis (articulis ultimis exceptis) testaceo-rufis ; elytris testaceo-rufis iridescentibus, maculis utrinque late separatis duabus ; antennarum articulis 7—11 fulvis.

Long. $3\frac{1}{4}$ lin. ♂ ♀.

Kawachi.

The head is minutely shagreened and small in both sexes. The thorax is much longer than in *B. bipustulatus*, shagreened and subopake ; gradually narrowed behind, with rounded hind angles. The elytra are sharply and finely striated ; both the black spots are lateral, the one in the middle, extending from the 2nd to the 8th stria, and the other subtriangular, at the outer angle of the apex, reaching the margin, except for the red, reflexed edge of the elytron. The 1st antennal joint is red ; the 2nd red, with a black spot ; the 3rd—6th black, and 7th—11th tawny-red. Beneath, the prothorax and the mesothorax are red ; the rest black.

B. nigriceps, Morawitz, Beitr. Käferf. Ins. Jesso, p. 36.

"Fuscus, capite nigro, prothorace rufo, basin versus attenuato, utrinque profunde impresso; elytris testaceis, cæruleo-submicantibus, tenuiter striatis, interstitio tertio

bipunctato ; antennarum articulo primo pedibusque testaceis. 4½ millim. ♀." (Moraw.)

Hakodadi.

Allied to *B. peltatus*.

B. vittatus, n. sp.

Testaceo-fulvus, capite, antennis medio, vittâque latâ elytrorum, communi, suturali, fusco-nigris.

Long. 3 lin. ♂.

Kawachi. One specimen.

Elongate, slender. Head very finely shagreened; epistome, labrum and palpi tawny-red. Thorax with sides strongly arcuated, narrowing much to the base; hind angles scarcely indicated, and sides of base very oblique. Elytra strongly, silky-iridescent, deeply striated, glossy-fulvous, with a black sutural vitta occupying interstices 1—3, but terminating a little before the apex. The underside is testaceous-yellow.

B. marginellus, n. sp.

B. peltato formâ similis. Gracilis, piceo-fuscus, capite obscuriori, thorace et elytris testaceo-rufo marginatis, his æneo-nitidis profunde striatis; pedibus flavo-testaceis.

Long. 2½ lin. ♂ ♀.

Nagasaki.

The head is black, finely shagreened ; the labrum pale. The palpi and two basal joints of the antennæ are pale pitchy-red ; the rest of the antennæ darker piceous, becoming tawny towards the apex. The thorax is subquadrate, moderately narrowed behind, with the hind angles distinct, though very obtuse and much reflexed, together with the whole of the lateral margin near the angle ; the sides of the base are cut obliquely towards the angle, much more so than in *B. peltatus* ; the middle is strigose, and the foveæ on each side very deep ; the surface is glossy, blackish-brown, with pallid and tolerably well-defined lateral border. The elytra are brassy-brown, glossy and slightly iridescent, deeply striated, with the reflexed margin all round pallid-testaceous. Legs testaceous-yellow.

Group 3. *Quadripalmati.*

Subfam. Anisodactylinæ.

Anisodactylus signatus, Illig. Käf. Preuss. i. 174.

Nagasaki (many examples) ; Hakodadi. Also R.

Amur, E. Siberia, Caucasus, and South and Central Europe.

I see no difference between Japanese and European specimens of this well-known insect.

A. punctatipennis, Morawitz, Bull. Ac. St. Petersb. 1862, 326 ; id., Beitr. Käferf. Ins. Jesso, p. 65.

Hiogo ; Nagasaki (abundant in marshy places) ; Hakodadi.

Closely resembling the common European *A. binotatus ;* but distinct in the punctulate interstices of the elytra and the broader and more regularly rounded thorax.

A. tricuspidatus, Morawitz, Beitr. Käferf. Ins. Jesso, p. 66.

Hiogo. One example.

Differs from *A. punctatipennis* chiefly by the tridentate apical spur of the anterior tibiæ.

Dichirotrichus tenuimanus, n. sp.

D. pubescenti similis ; minor, thoracis angulis posticis obtusis haud prominulis. Elongatus, dense breviter pubescens, nigro-piceus, thoracis limbo elytrorumque marginibus fulvo-piceis, pedibus flavo-testaceis ; thorace quadrato-subcordato basi utrinque oblique truncato, angulis posticis obtusis ; tarsis anticis ♂ anguste dilatatis.

Long $2\frac{1}{4}$—$2\frac{3}{4}$ lin. ♂ ♀.

Hiogo ; Nagasaki.

Differs from both *D. pubescens* and *ustulatus* in the form of the thorax, which is narrowed behind gradually and without sinuation, the hind angles being obtuse, and with only a very minute point at their apices. The surface of the head and thorax is more finely and densely punctured than in *D. pubescens*, but the punctures stand at considerable distances from each other, especially on the disks ; they are shining, pitchy-black, with the limb of the thorax indeterminately rufous. The mouth and palpi are more or less pallid, the last joint of the maxillaries at the base and the penultimate being often black ; the palpi are more acutely pointed than in the allied species. The striæ of the elytra are fine, but sharply cut ; the scutellar striole wanting, the interstices very finely punctured ; the colour of the elytra is rusty-red, with the whole disk of each blackish, leaving ill-defined, narrow, apical and

sutural, and broader basal and lateral, margins of the ground colour. The legs are pale yellowish-tawny; the antennæ vary in colour, being rufous or fuscous, with the base pale. Beneath the body is shining black, punctured and pubescent. The four joints of the anterior tarsi of the male are very moderately dilated, triangular, with the angles rounded.

Subfam. HARPALINÆ.

Harpalus capito, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 359; *H. cephalotes*, Motsch. Etudes Ent. 1861, p. 3 (name preocc.)

Nagasaki; in sandy places. Also at Kiu-Kiang on the Yang-tsze, and on the Usuri, in Manchuria.

Allied to *H. ruficornis*, but with head of very large size and acute hind angles to the thorax.

H. ruficornis, Fab. et auctor.

Nagasaki; Yesso.

As Morawitz remarks, Japanese specimens differ from European in the obtuse hind angles of the thorax. I do not see clearly the other difference he points out, namely, the feeble sinuation of the apex of the elytra. They agree precisely in size and facies, and the obtuse thoracic angles are shared in by East Siberian specimens from Lake Baikal to Manchuria.

H. griseus, Panz.; Dej. Spéc. Gen. iv. 251.

Hiogo; Hakodadi (Morawitz); Shanghai; East Siberia (apparently very common).

I see no difference between Japanese, Siberian and French specimens of this species; the hind angles of the thorax are not quite so obtuse as in Japanese specimens of *ruficornis*. There remains only the relatively smaller head and broader flattened margins of the thorax (besides the inferior size) to distinguish *griseus*.

H. roninus, n. sp.

Magnus, oblongus, niger, dense breviter fulvo-pubescens, omnino crebre punctulatus; palpis antennisque rufo-piceis; thorace quadrato, lateribus antice paulo rotundato postice parum angustato, angulis obtusis; elytris simpliciter striatis, apice fortiter sinuatis.

Long. $7\frac{1}{2}$—$9\frac{1}{2}$ lin. ♀ ♂.

Nagasaki; confined to granitic districts.

Allied to *H. ruficornis*, but entirely dull black, with the exception of the tawny-reddish antennæ and palpi, and the entire upper surface is minutely punctulated, the elytra having a tawny silky pubescence similar to *ruficornis*. The head is similar in form, but relatively larger, in both sexes. The thorax is larger, more regularly rounded on the sides, and with raised lateral rims (not explanate) and obtuse hind angles; its whole surface is punctulate.

H. tridens, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 326; id. Beitr. p. 69, t. 1, f. 26.

Hakodadi.

I have not seen this species, which resembles a small *ruficornis*, but has impunctate inner interstices of the elytra, and a tridentate spur to the anterior tibiæ.

H. lævicollis, Dufts. Fn. Austr. ii. 163; Morawitz, Beitr. p. 71; *rugicollis*, Motsch. Etudes Ent. 1860, p. 5.?

Nagasaki; Hiogo (abundant); Hakodadi (Moraw.).

Japanese specimens differ from those of central Europe in being perceptibly more convex, of a browner-black hue, and having the antennæ, like the legs, wholly tawny-reddish. As, however, it is a variable species in Europe, I agree with Morawitz in thinking it inadvisable to distinguish it by a separate name. Motschulsky has stated that his *rugicollis* = *Japonicus*, Moraw. If so, his description is utterly beside the mark; but it is perhaps waste of time to try to understand what this recklessly inaccurate author meant by his diagnosis.

H. Japonicus, Morawitz, Bull. Ac. St. Petersb. v. 1863, 327.

Hiogo; Nagasaki; Hakodadi. Also at Kiu-Kiang, on the Yang-tsze, Shanghai, Foochow, and abundant in the Island of Formosa.

H. argutoroïdes, n. sp.

Elongatus, niger nitidus, partibus oris, antennis extus, pedibusque rufo-piceis; capite parvo, thorace valde elongato-quadrato, lateribus antice leviter rotundato, postice perparum angustato, angulis posticis rectis, basi utrinque foveâ magnâ grosse punctatâ; elytris oblongis, apice nullomodo sinuatis, fortiter striatis.

Long. 4 lin. ♂.

Nagasaki; several examples, under dead leaves.

A peculiar species, owing to its small head and elongate-quadrate thorax, which give it a facies different from all other *Harpali*. The mandibles are longer than is customary in this genus, and project further beyond the labrum; the last joint of the maxillary palpi is quite as long as the penultimate, and tapers more towards the apex, which latter, however, is distinctly truncated; the mentum has a short acute tooth. The head is very smooth and shining, with the transverse line, as well as lateral foveæ, deeply impressed. The thorax is not quite so long as broad, nearly square, with distinct anterior, and rectangular posterior, angles; the sides are slightly rounded anteriorly, and very feebly narrowed (without sinuation) behind the middle; the lateral margins form a thick raised rim, which is separated from the disk by a strong furrow, and is of a reddish colour; the basal foveæ stand midway between the deep dorsal line and the angle, and are oblong, deep and coarsely punctured. The elytra are very little broader than the thorax, parallel, deeply striated and faintly sinuated near the apex; the interstices are convex and impunctate; there is an indistinct setiferous puncture on the 3rd (close to the 2nd stria), and the scutellar striole is very short. The underside of the thorax is sparingly and coarsely punctured.

H. platynotus, n. sp.

Latus, convexus, nigro-piceus, parum nitidus; palpis, antennis pedibusque rufo-piceis; capite lævi; thorace elytris latiori, subtiliter coriaceo, lateribus et basi punctulato-rugoso, angulis posticis subrectis; elytris breviter oblongis, simpliciter fortiter striatis, glabris; tibiis anticis apice extus dilatatis.

Long. 6—7 lin. ♂ ♀.

Hiogo; Awomori.

Unlike any other species of *Harpalus* known to me. Shorter and broader even than *H. zabroïdes*, but the thorax (especially in large examples) dilated anteriorly and wider there than the elytra. The colour is dark pitchy, and the surface dull, owing to the fine coriaceous sculpture; destitute of pubescence. The head is impunctate. The thorax is transverse-quadrate, strongly rounded on the sides anteriorly, and narrowed (without distinct sinuation) from the middle to the nearly rectangular hind angles; the lateral raised (rufous) margin is separated from the disk by a broad coarsely punctured groove, and the whole

base (to one-third the thoracic surface) is thickly and rugosely punctulated; a raised rim extends uniformly along the basal margin. The elytra are convex, and suddenly declivous at the apex; the striæ are very deep; the 3rd interstice has a setiferous puncture; the lateral interstices are more distinctly coriaceous and opake than the dorsal. The legs are short and stout; the basal joint of the hind tarsi is not larger than the 2nd; the anterior tibiæ are much dilated externally.

H. chalcentus, n. sp.

Elongato-oblongus, suprà viridi vel cupreo-æneus, politus, feminæ elytris cupreis sericeo-opacis; palpis antennisque piceo-rufis, pedibus piceis; capite impunctato; thorace quadrato lateribus antice perparum rotundato, antice angustato, postice vix angustato angulis posticis subrectis, basi late et lateribus anguste crebre punctatis; elytris apice parum sinuatis, fortiter striatis, interstitiis subplanis impunctatis, 3io puncto setifero unico.

Long. 5½—6½ lin. ♀ ♂.

Hiogo; Nagasaki. Also Korea and Kiu-Kiang on the Yang-tsze, China.

Differs from the European metallic *Harpali* by its more elongate shape, and by the metallic colouring of the ♀, which differs only from the ♂ in the elytra being silky-opake, cupreous. The thorax is very slightly rotundate, dilated anteriorly, and only very slightly narrowed (without sinuation) behind; the hind angles are nearly rectangular, though rounded at their apices; in front the thorax is narrowed to the anterior angles; the lateral rim is separate from the disk by a shallow groove, thickly punctured and subrugose like the whole of the base. The elytra are elongate-oblong, deeply striated, highly-polished and smooth in the ♀ with slightly convex interstices; silky-opake in the ♀, with flat interstices. The apical sinuation is broad and shallow. The legs are shining pitchy-black, with the anterior tarsi redder; the antennæ and palpi are tawny-red. In colour the head and thorax are generally greener than the elytra.

Apparently allied to *H. erosus*, Dej., of Siberia, which is at once distinguished by the deep apical emargination of the elytra.

H. tinctulus, n. sp.

H. limbato (Dufts.) proxime affinis, at multo minor elytrisque cyaneo-tinctis. Parvus, piceo-niger, elytris ♂

nitidis cyaneo-relucentibus, ♀ sericeo-opacis; palpis, antennis pedibusque rufo-testaceis; thorace quadrato lateribus antice paulo rotundatis, postice parum angustatis, angulis posticis subrectis, basi omnino crebre punctulato, margine laterali rufescenti; elytris apice leviter sinuatis, fortiter striatis, interstitio 3^io^ postice unipunctato.

Long. 3—3½ lin. ♀♂.

Nagasaki. Also Korea and Kiu-Kiang on the Yang-tsze, China. Abundant.

Precisely similar in shape, sculpture and colours to the European *H. limbatus*, except that the elytra of the ♂ have a blue or green gloss. The base of the thorax over a wide space is minutely punctured, the punctuation extending on each side far towards the disk; this character distinguishes it from *H. luteicornis*, with which it agrees better than with *H. limbatus* in the rectangular hind angles of the thorax. The setiferous puncture of the elytra lies very far back; the striæ are deeper towards the apex, and the interstices more convex; the extreme lateral margins of the elytra are rufescent. The female has silky-opake elytra, with a slight greenish gloss.

H. relucens, n. sp.

Oblongo-ellipticus, picco-niger in utroque sexu nitidus, elytris virescenti-relucentibus; palpis, antennis, thoracis margine laterali pedibusque fulvis; thorace transverso, antice angustato lateribus parum arcuatis, angulis posticis subrotundatis, basi toto lateribusque crebre punctatis; elytris fortiter striatis, interstitiis subplanis tertio unipunctato.

Long. 3 lin. ♂♀.

Nagasaki (many examples); also in China, at Foochow.

Similar to *H. tinctulus* in facies and colour, but distinguished by the thorax having the posterior angles very obtuse and almost rounded, and by the ♀ being quite as polished as the ♂; the surface of both being very glossy. The striæ become sulci towards the apex, and the interstices narrow and convex. The thorax is as wide anteriorly as the elytra, but narrows slightly behind.

H. rubefactus, n. sp.

Rufo-testaceus, ♂ nitidus, ♀ sericeo-subopacus; capite polito, lævi; thorace transversim quadrato, lateribus antice paululum rotundato, postice vix angustato, angulis posticis rectis, basi toto late discrete punctato; elytris mox pone medium angustatis, apice vix sinuatis, fortiter striatis,

interstitio 3^io puncto setifero magno, lateribus subtiliter coriaceis; tibiis anticis extus apice productis.

Long. 4½ lin. ♂ ♀.

Hiogo.

A curious species, distinguished by its rufous colour (rusty testaceous above, pallid beneath), and by the elytra narrowing from after the middle to the apex. The thorax is short and broad, but not so wide as the elytra; it broadens very slightly for a short distance from the anterior angles, and narrows again from the middle, almost imperceptibly to the base; the posterior angles are quite rectangular, and the whole base is covered with punctures. The elytra have a shallow sinuation near the apex; the striæ are simple and deep, and the setiferous puncture on the 3rd interstice is large and conspicuous. The anterior tibiæ have their anterior outer angles produced and oblique.

H. discrepans, Morawitz, Bull. Ac. St. Petersb. v. 1863, 327.

Yesso.

Mr. Lewis did not meet with this, which is a shining black species, allied to *H. limbatus*, but with black legs and punctulated elytral interstices.

H. fuliginosus, Dufts. Fn. Austr. ii. 83.

Yesso (Morawitz).

I have not seen Japanese specimens of this well-known European species.

H. zabroïdes, Dej. Spéc. Gen. iv. 343 ; *Pheuginus corporosus*, Motsch. Etudes Ent. 1861, p. 3.

Hakodadi (Morawitz).

Also a well-known European species. According to Morawitz, Japanese specimens differ in having crenated elytral striæ.

H. lucidus, Morawitz, Beitr. p. 72, t. 1, f. 28.

Hakodadi.

" Luteus, elytris nigris chalybeo-micantibus."

I have seen nothing approaching the peculiar coloration of this species from Japan.

Tachycellus anchomenoïdes, n. sp.

Elongatus obovatus, niger nitidus, partibus oris, antennarum scapo, thoracis margine angustissimo pedibusque

rufo-piceis; thorace postice angustato angulis posticis rotundatis, basi sparsim punctato.

Long. $2\frac{2}{3}$ lin. ♂ ♀.

Nagasaki.

Allied to *T. curtulus*, Moraw. (R. Amur), differing chiefly in the black elytra. The head is small and smooth. The thorax is about half the width of the elytra, moderately and regularly rounded on the sides, a little more narrowed behind than before, and with rounded hind angles; the basal foveæ are large and rather deep, coarsely but sparsely punctured; the reflexed lateral margins are translucent pitchy-red. The elytra are oblong-ovate, widened behind, obliquely sinuate near the apex; the surface is shining pitchy-black, with a slight bronzy tint, becoming rufous-pitchy only on the extreme margins; the striæ are impunctate, the scutellar striole well developed; the interstices nearly plane, smooth, the 3rd with a puncture behind the middle. The antennæ are pitchy-black, with the base and apex rufous; the legs pitchy-red. The base of the abdomen in the ♂ has an oblong pubescent fovea. The anterior tarsi in the same sex have widely dilated triangular joints, the lateral angles in 2—4 being acute, and the 4th angularly emarginate. The middle tarsi are similar in form but much narrower.

Tachycellus grandiceps, n. sp.

T. anchomenoïde longior, capite crassiori. Elongatus, niger, nitidus; antennarum scapo, palpis pedibusque rufo-piceis; capite magno, thorace antice haud angustiori, ante oculos citius angustato, mandibulis apice crassis; thorace postice gradatim rotundato-angustato, angulis posticis rotundatis, foveolis sparsim punctatis; elytris thorace paulo latioribus, elongatis, apice oblique sinuatis, suprà striatis.

Long. 3 lin. ♂ ♀.

Approaching *Platymetopus* in form and in the size and shape of the head. Same colours as *T. anchomenoïdes*, elytra with a slight brassy tinge, scarcely rufescent on the apical margins; lateral margins of the thorax rufescent. The antennæ are black, with the scape only red. The palpi are pitchy-red, with the long pointed apices pallid. Thorax punctured only in the basal foveæ. Elytra elongate, not dilated, deeply striated, third interstice with one puncture. The base of the abdomen, in the ♂,

has in the middle an oblong pubescent fovea. The anterior tarsi of the ♂ are triangularly dilated, but the lateral angles are blunter, and in the 4th joint produced into lobes.

Bradycellus læticolor, n. sp.

Flavo-testaceus, capite et elytris nigris, thorace rufo; antennis (articulis duobus basalibus rufis exceptis) nigris; thorace postice modice angustato, angulis posticis obtusis sed haud rotundatis, foveâ basali magnâ, punctatâ.

Long. $2\frac{1}{2}$ lin. ♀.

Nagasaki. One specimen also taken, on the banks of the Yang-tsze, in China.

Similar in form to the *B. distinctus*, but head larger and thicker behind the eyes, which are embraced behind by an orbit. The palpi are tawny-testaceous. The thorax is shorter and broader than in *B. distinctus*, dilated and rounded almost immediately behind the anterior angles, then moderately narrowed (not sinuated to the distinct but obtuse hind angles); the basal fovea is large and deep, and coarsely punctured. The elytra are glossy black, sharply but simply striated, and without scutellar striole. The underside is reddish-testaceous, with the metasternum darker.

This may prove to be a *Tachycellus*, when the ♂ is known.

Bradycellus fimbriatus, n. sp.

Brevis, elongato-ovatus, fusco-piceus, elytris utrinque margine toto testacco-rufo; thorace colore variabili, palpis pedibusque flavo-testaceis; thorace elytris angustiori, antice angustato, postice lateribus et angulis posticis rectis, basi sparsim grosse punctato.

$1\frac{3}{5}$—$1\frac{3}{4}$ lin. ♂ ♀.

Nagasaki.

General form short, oblong-ovate, with the thorax not at all cordate, but narrowed in front and with nearly straight sides behind; hind angles rectangular, basal foveæ long and narrow, and the whole base sparingly but rather coarsely punctured. The colour is variable; but the disk of each elytron is always pitchy-black, leaving rufous margins which occupy one interstice at the suture and four at the sides and apex; the head and thorax are generally rusty-testaceous, with the disks piceous. The antennæ are short and thick for this genus, with joints 2—10 almost

moniliform, and the 11th oblong and stout; they are rufous in colour, darker than the palpi and legs, which are yellowish-testaceous. The head is similar in form to that of *B. harpalinus*. The elytra are punctulate-striate, the 5th—7th striæ very faintly impressed and the scutellar striole wanting. Beneath, the gula is remarkably large and convex, and the thorax and abdomen punctulate. The anterior edge of the prosternum is not marginated; the middle of the basal segment of the abdomen has an elongate pubescent fovea.

In some respects this species agrees with *Tachycellus*, but the middle tarsi of the ♂ are decidedly simple and without squamæ on the soles. The terminal joint of the palpi is much longer than the penultimate, and the mentum has a distinct acute tooth.

Trichotichnus longitarsis, Morawitz, Beitr. Käferf. Ins. Jesso, p. 65.

Nagasaki; Kawachi; Hakodadi (Moraw.)

This insect has the general figure of *Bradycellus harpalinus*, but is of vastly greater size, being $4\frac{1}{2}$ to 5 lines in length. The generic character resides chiefly in the absence of scales and hairs from the middle of the soles of the dilated tarsi of the ♂. Both anterior and middle tarsi are moderately dilated; the margins of the soles fringed with long hairs, the centres naked. The head and thorax are bright ferruginous-red, in the type, with the elytra pitchy-black or brown; but Mr. Lewis took examples which have the whole upper surface of the same piceous colour.

Acupalpus inornatus, n. sp.

Elongatus, fulvo-testaceus, antennarum basi, palpis pedibusque pallidioribus; oculis magnis; thorace postice modice angustato, angulis posticis valde obtusis; elytris iridescentibus, acute striatis.

Long. $1\frac{3}{4}$ lin. ♀.

Nagasaki; two examples. Also in China; at Kiu-Kiang.

Less elongate than *A. consputus*, and differing in the very obtuse, almost rounded, hind angles of the thorax; the hind margin near the angles is reflexed, enclosing the broad shallow basal fovea, which is finely punctured. The eyes are still more convex than in *A. consputus*. The elytra are a shade browner in colour than the tawny-red

head and thorax, and have an iridescent gloss; the striæ are strongly and sharply impressed, with the usual scutellar striole and interstitial puncture. The two basal joints of the antennæ are yellow, the rest tawny-brown.

Anoplogenius circumcinctus.—Megrammus circumcinctus, Motsch., Etudes Entom. 1857, p. 26.

Osaka. Also in China; at Kiu-Kiang (Yang-tsze), Shanghai, Ningpo, and Foochow; apparently a common insect.

M. Morawitz appears not to admit *Anoplogenius* as distinct from *Stenolophus*. The structural differences are indeed very slight, but *Anoplogenius* may be known at once by the absence of the abbreviated scutellar stria.

Stenolophus propinquus, Morawitz, Bull. Ac. St. Petersb. 1862, p. 261; id. Beitr. Käferf. Ins. Jesso, p. 80.—*S. Japanus*, Motsch., Bull. Mosc. 1864, 3, p. 203.

I. Yesso. Mr. Lewis did not meet with this species.

S. castaneipennis, n. sp.

S. vespertino simillimus; differt tantùm angulis posticis thoracis distincte marginatis. Elongato-oblongus, piceo-niger, nitidus, elytris rufo-castaneis, suturam versus saturatioribus; pedibus pallidis; antennarum scapo et palpis flavo-testaceis, his fusco-maculatis.

Long. 3 lin. ♂ ♀.

Nagasaki; three examples.

Very closely allied to the European *S. vespertinus*. The thorax is decidedly shorter, with more rounded basal margin and with the marginal rim more strongly raised round the hind angles.

S. proximus, Dej. Spéc. Gen. iv. p. 420.

Hiogo; Hakodadi (Morawitz); Shanghai.

Morawitz states that there is no difference between Yesso specimens and others from Southern Russia. I have not been able to obtain specimens of *proximus*, to make the comparison; but Mr. Lewis's specimens agree very well with Dejean's description. They differ only in their rather smaller size from the Chinese *S. iridicolor* (Redtenb.). A variety occurs which has entirely pale tawny-testaceous antennæ (var. *fulvicornis*), the smaller specimens of which

are only 2 lines long. Intermediate examples have the two basal and several apical joints only tawny. I can see no other difference.

S. chalceus, n. sp.

Suprà viridi-æneus, antennis basi, palpis, thoracis et elytrorum marginibus pedibusque flavo-testaceis; oculis valde convexis; thorace regulariter rotundato, foveis minute punctulatis.

Long. $2\frac{1}{4}$—$2\frac{1}{2}$ lin. ♂ ♀.

One example, Hiogo. Taken by Mr. Lewis also at Kiu-Kiang, on the Yang-tsze, in China.

Similar in general form to *S. vespertinus*, but distinguished from all the allied species by its prominent eyes, rounded (almost circular) thorax and brassy-green colour. The antennæ are brown, except the two yellowish basal joints. The thoracic foveæ are shallow and covered with a fine punctuation. The elytral interstices are plane; the margins and the apex yellowish. Underneath pitchy.

S. quinque-pustulatus,—*Badister*, id. Wiedm. Zool. Mag. ii., i., p. 58.

Nagasaki. Also at Kiu-Kiang, on the Yang-tsze; Cochin China; Bengal.

I have not seen specimens from the locality whence Wiedmann obtained the species, but as Japanese specimens do not differ from others from China and Saigon, I believe the species is the same. The pale spots of the elytra are somewhat variable; the posterior discal one being absent in many cases.

Platymetopus corrosus, n. sp.

P. vestito similis. Elongato-oblongus, cupreo-niger obscurus, subopacus, pilis brevibus fulvis dense vestitus, pedibus palpisque concoloribus, antennis basi rufo-testaceis; capite (labro incluso) crebre punctato; thorace grosse punctato-rugoso et punctulato, angulis posticis obtusis; elytris crebre punctulatis, punctato-striatis, interstitiis 3io—5to et 7mo paulo elevatis.

Long. $3\frac{1}{2}$—4 lin. ♂ ♀.

Hiogo; Nagasaki. Also on the Yang-tsze and at Foochow, in China.

Resembles *P. vestitus*, a Senegal species, but it seems most closely allied to *P. Thunbergi* (Quensel), a species

I do not know, and which has been variously recorded as from India and the Cape of Good Hope. The general colour is a dull coppery, and the whole upper surface very densely clothed with short tawny hairs. The palpi are brassy-black, except the extreme points, which are pallid. The antennæ are black or dark brown, with the 1st or the 1st and 2nd joints reddish. The thorax is transverse-quadrate, moderately widened to one-third the length, then slightly narrowed posteriorly, forming obtuse hind angles, the apices of which project a little; the surface is as if corroded, impressed with large irregularly confluent punctures, forming here and there coarse rugæ, and all the interstices covered with a fine punctuation. The elytra are deeply sinuate at the tip; the striæ are distinctly punctured, and the 3rd, 5th and 7th interstices raised.

The paraglossæ are large and connate with the ligula, surrounding the apex and meeting above, as in the *Lebiadæ*. The anterior and middle tarsi of the ♂ have four joints moderately dilated, the soles clothed with small scales arranged in two rows.

It is not stated in Gemminger and Harold's Catalogue on what authority *Platymetopus Thunbergi* of Dejean is placed as a synonym of *Dioryche torta* of Macleay's *Annulosa Javanica* and the universally-used generic name of Dejean's changed, in consequence, for the prior name of Macleay. This very unwise change and confusion of nomenclature are founded on a complication of mistakes which could not possibly have been committed if the original descriptions had been consulted. There is not one point of agreement between the descriptions of *Dioryche torta* and *Platymetopus Thunbergi*. The generic characters given with *Dioryche* are vague in the extreme and teach nothing, so that the name would have no right to supplant another well-defined one in general use, even if it were synonymous, which is not clear in the present case, as *D. torta* probably does not belong to Dejean's genus. Dr. Gemminger (to whose superior eagerness to change established names on any sort of excuse we owe the "Catalogue" of *Carabidæ*) also separates the *P. Thunbergi* of Dejean from that of Quensel (in Schönh. Syn.). This appears another unwarrantable change. Dejean received his specimen from Schönherr himself, and his description agrees exceedingly well with that of Quensel. There appears simply to have been some error as to

locality. Quensel gives Cape of Good Hope and Dejean (on the authority of Schönherr) "Indes Orientales."

Group 4. *Tripalmati.*

Subfam. Anchomeninæ.

Pristonychus æneolus, n. sp.

Elongatus, gracillimus, piceo-niger, elytris æneseentibus lucidis; palpis, antennis, tibiis et tarsis picco-rufis; capite elongato, oculis vix prominulis; thorace elongato, angusto, postice gradatim angustato, lateribus explanatis reflexis, angulis posticis apice rotundatis; elytris profunde punctulato-striatis; tarsis infrà dense hirsutis, suprà glabris, lateribus sulcatis, unguiculis fortiter pectinatis.

Long. $6\frac{1}{2}$—7 lin. ♂ ♀.

Kawachi; in damp woods.

A long and slender but convex species, with corresponding long antennæ and legs; pitchy-black, with dark æneous elytra. The antennæ and palpi are dark tawny-red. The thorax differs in form from all the European species. It is considerably longer than broad and appears therefore very long and narrow; the anterior angles dip downwards and are inconspicuous, the sides are broadly explanate and up-turned and the hind angles are rounded at their apices; the thorax is a little wider at one-third its length, thence very gradually narrowing to the base; the middle of the base is broadly emarginate and there are a few shallow punctures in the broad basal foveæ. The striæ of the elytra are very deep and punctulate. The soles of all the tarsi are more densely clothed with hairs in both sexes than in other species; the upper side of the tarsi is quite glabrous and the sides grooved.

Dolichus flavicornis, Fab. et auctor.

Common in Japan and in Northern China.

D. callitheres, n. sp.

D. flavicorni multo minor, gracilior. Vix convexus, picco-niger; antennis, palpis, pedibusque picco-fulvis; thorace quadrato, lateribus antice vix rotundato postice gradatim angustato, angulis posticis obtusis, basi utrinque juxta angulum oblique truncato, suprà omnino impunctato; elytris apice nullomodo sinuatis, suprà subopacis, acute

striatis, interstitio 3io bipunctato; tarsis omnibus utrinque sulcatis.

Long. 6 lin. ♀

Hiogo; one example.

Agrees with *Dolichus* in facies and in the slender cylindrical terminal joints of the palpi; but differs in the anterior tarsi (as well as the others) being deeply sulcated on each side. The head is rather more slender and the eyes less prominent. The thorax is wholly impunctate and the hind angles are distinct although obtuse; the lateral edges are not rufous. The elytra are not sinuate at their apices and the striæ are simple; their surface is not so opake, but has a silky gloss.

Crepidactyla nitida, Motsch. Etudes Entom. 1861, p. 5.

Kawachi; Yesso.

Pristodactyla cyclodera, n. sp.

Magna, robusta, nigra, nitida; palpis, antennis, tibiis et tarsis piceo-rufis; thorace convexo, ovato, lateribus regulariter rotundato; elytris oblongo-ovatis, fortiter striatis.

Long. $6\frac{1}{2}$ lin. ♂ ♀.

Nagasaki; also at Foochow, China.

Closely resembling *Crepidactyla nitida*, but differing in the generic character of labial palpi not securiform. The head is small. The thorax large and ovate, with sides regularly rounded, so that the greatest width is in the middle; the anterior angles are distinct, but the hind angles are rounded off; the reflexed lateral margins are rufo-piceous, the basal foveæ, like the rest of the surface, impunctate. The sides of the middle and posterior tarsi are grooved; the claws have 4—5 fine denticulations. The labial palpi in both sexes are only slightly dilated towards the apex and truncated; this is the only character I can find distinguishing the genus from *Crepidactyla* and *Taphria*.

Pristodactyla dulcigrada, n. sp.

Elongata, gracilis, parum convexa, nigro-picea; antennis, palpis, pedibus, margineque thoracis piceo-fulvis; thorace quadrato, lateribus paululum regulariter arcuatis, angulis posticis obtusissimis, suprà impunctato; elytris apice singulatim acute rotundatis, suprà fortiter striatis, nitidis, interstitio 3io bipunctato; tarsis intermediis et posticis utrinque sulcatis.

Long. $4\frac{1}{4}$—$4\frac{1}{2}$ lin. ♂ ♀

Hiogo; Nagasaki.

The labial palpi are very slightly dilated from base to apex and truncated, not much more so than in *Dolichus;* the species would therefore fit very well in the genus *Dolichus;* but this would entail the incorporation in the same genus of all the North American species known to me (*P. impunctata, dubia, advena* and *Mexicana*). The present species has shining and not opake elytra, and the thorax is about as long as broad, with very slightly arcuated sides, the greatest width being a little before the middle; the hind angles are almost completely rounded off. The edges of the thorax are reddish, and the apex of each elytron is wedge-shaped.

Pristodactyla arcuaticollis, Mots. Etudes Entom. 1860, p. 7.

A broader species than the last, with broader and more strongly rounded thorax. The labial palpi are similarly slightly dilated and sharply truncated; the middle and posterior tarsi sulcated.

Taphria congrua, Morawitz, Bull. Ac. St. Petersb. 1863, p. 249.

Nagasaki (one example). Bureja Mts., Amur. (Moraw.)

Closely allied to *T. nivalis;* a little larger, with longer and less rounded thorax.

Taphria crassipalpis, n. sp.

Elongata, robusta, nigra nitida; palpis, labro, antennis, pedibusque piceo-rufis; fronte lateribus grosse punctato; thorace quadrato-cordato, angulis posticis distinctis obtusis, basi sparsim grosse punctato; elytris sulcato-striatis; pedibus brevibus; tarsis haud sulcatis; palpis labialibus (♀) articulo ultimo grossissime inflato-securiformi.

Long. $5\frac{1}{2}$ lin. ♀.

Hiogo; one example.

According to the thick, widely-securiform labial palpi, this species would belong to *Crepidactyla*, but the shorter legs and ungrooved tarsal joints bring it nearer *Taphria*, whilst the subcordate thorax removes it equally from both genera as at present defined. The head is rather larger and the neck thicker than in the allied genera; the sides of the forehead have a few confluent large punctures, or rather coarse irregular rugæ. The terminal joint of the

maxillary palpi is nearly cylindrical and as long as the preceding. The thorax is rather elongate, its sides rounded anteriorly; moderately narrowed posteriorly without distinct sinuation; the hind angles are distinct although obtuse, and the sides of the base cut obliquely on each side towards the angle; the basal foveæ are long, broad, and deep.

Colpodes atricomes, n. sp.

Niger, nitidus; antennis, palpis, tibiis et tarsis piceo-rufis; thorace quadrato postice plusquam antice angustato, lateribus late æqualiter explanatis, piceis, angulis posticis rotundatis; elytris amplis, apice utrinque bisinuatis, angulo suturali spinoso; tarsis intermediis et posticis suprà fortiter bisulcatis, articulis 1—4 subtus dense breviter pilosis, articulo 4to anticorum et intermediorum bilobato, posticorum emarginato, angulo exteriori paulo elongato.

Long. 6 lin. ♂ ♀.

Hiogo; several examples.

Resembles closely the black *Anchomeni* of the *Limodromus* group. The palpi are long, the terminal joint of the maxillaries much shorter than the preceding. The antennæ are long and slender, 3rd and 4th joints nearly equal. The head is small and narrowed, in equal manner, anteriorly to the labrum and posteriorly to the neck. The thorax is about half the width of the elytra; widely and equally margined, rather strongly rounded on the sides; widest before the middle, where it is by a half wider than the length; the sides are strongly upturned, leaving a wide groove between the edges and the disk; disk faintly wrinkled. The elytra are ample and at the tip obliquely bisinuate, the produced spine at the suture causing a second short sinuation besides the usual longer external one; the surface is strongly striated, the striæ faintly punctulated.

C. splendens, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 324; id. Beitr. p. 40, t. 1, f. 19.

Nagasaki; Hiogo; Yokohama; Yesso.

A large species with brilliant brassy elytra.

C. lampros, n. sp.

Testaceo-rufus, capite et thoracis disco nigro-castaneis; elytris (marginibus lateralibus rufis exceptis) viridi-auratis

nitidissimis; capite collo elongato, oculis vix prominulis; thorace valde transverso, lateribus latissime explanatis et fortiter rotundatis; elytris oblongo-ovatis, fortiter striatis, apice oblique leviter sinuatis; tarsis intermediis et posticis utrinque sulcatis, articulo 4to omnium bilobato, lobo exteriori longiori, posticis multo longiori et lobo interiori obsoleto.

Long. $4\frac{1}{2}$—5 lin. ♂ ♀.

Hiogo; abundant.

Allied to *C. Lafertei* (Montr.) of New Caledonia; but the thorax still wider and more strongly rounded in the middle; the hind angles are rounded and scarcely perceptible; the flattened sides are extremely wide and nearly equal from base to apex; the widest part is a little before the middle, the posterior narrowing being a little more gradual than the anterior. The legs and underside are uniform tawny-reddish. The head is long and narrow, especially behind, and the eyes little prominent. The exterior lobe of 4th joint in all the tarsi is elongated, but most so on the hind feet, where the 4th joint is truly unilobular.

C. modestior, n. sp.

C. lampros proxime affinis, at colore multo obscurior, etc. Testaceo-rufus, capite et thoracisque disco nigro-castaneis; elytris (marginibus lateralibus rufis exceptis) olivacco-æneis; capite breviori, oculis exstantibus; thorace transverso, lateribus latissime explanatis et minus fortiter rotundatis, postice quàm antice paulo longius angustatis, angulis posticis distinctis, obtusis; elytris apice oblique sinuatis, suprà fortiter striatis, striis fundo crenatis.

Long. $3\frac{1}{2}$—4 lin. ♂ ♀.

Nagasaki.

The shorter head, especially behind, and the prominent eyes, give this species an appearance very distinct from *C. lampros;* it is very closely allied to *lampros*, as proved by the 4th tarsal joints, which are very similar in shape in all the feet; the grooves on the hinder tarsi are, however, different, being quite lateral in *modestior* and dorsal in *lampros*. The thorax has similar wide explanated margins, and the greatest width is a little before the middle, but it is narrowed rather less in front and forms behind much more distinct angles. The elytra are dark brassy-green, and not glittering golden-green, as in *lampros*.

C. sylphis, n. sp.

Gracilis, elongatus, testaceo-rufus; capite suprà, thoracisque disco nigro-castaneis, elytris (marginibus lateralibus rufis exceptis) aurato-æneis; capite elongato; thorace angusto, quadrato-cordato, postice sinuatim angustato, angulis posticis rectis, lateribus modice late explanatis, foveisque basalibus punctatis; elytris elongato-obovatis (versus basin angustatis), apice oblique sinuatis, versus suturam singulatim rotundatis, suprà fortiter punctulato-striatis; tarsis anticis et intermediis articulo 4to breviter bilobato, lobo exteriori longiori, posticis æqualiter emarginato.

Long. 5 lin. ♀.

Hiogo; two examples.

An elegant species, distinguished by the elytra being slightly dilated posteriorly. The head is long; gradually elongated posteriorly. The thorax is narrow, although it has an explanated border of considerable width: it is moderately rounded anteriorly, and, behind, narrows moderately (with sinuation) to the rectangular hind angles; the whole surface, except the rufous explanated margins, is glossy dark castaneous. The shoulders of the elytra are distinct, though rounded; the striæ are strongly impressed and distinctly punctulated. The sulci of the tarsi are lateral and distinctly marked only on the posterior pair.

C. Japonicus, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 324; id. Beitr. p. 41; *Tanystola Japonica*, Motsch. Etudes Entom. 1860, p. 9?

Hiogo; Yesso; China.

Similar to *C. lampros;* but rather larger and much duller in colour; the thorax narrower and ovate, with narrow explanate margins. The anterior tarsi alone have the 4th joint bilobed and but briefly; in the intermediate it is deeply emarginated, with the exterior angle a little more produced than the inner one; in the hind tarsi it is simply emarginated, without perceptible difference in length of the two sides. The species therefore approaches *Anchomenus*. The hind tarsi are grooved on the sides and not on the upper surface.

Dicranoncus femoralis, Chaudoir, Bull. Mosc. 1850, ii. p. 393; *Loxocrepis cœlestinus*, Motsch. Bull. Mosc. 1864, iv. p. 310.

Nagasaki. Also Birmah and Northern India.

Distinguished from *Colpodes* by the tarsal claws having a long tooth or spine at their base. I can find no difference between Japanese specimens and others from Northern India (from the late Judge Benson's collection) with which I have compared them. Motschulsky's description suits as far as it goes, but he overlooked the structure of the claws and placed it in the wrong genus.

Anchomenus (*Limodromus*) *protensus*.—*Dyscolus protensus*, Morawitz, Beitr. Käferf. Ins. Jesso, p. 42.

Hiogo; Nagasaki; Yesso (Moraw.) Also China.

Very much resembles *Colpodes atricomes*, but the 4th tarsal joint is triangular and barely emarginated even in the anterior feet, showing that it does not belong to the same genus. The form of the head and thorax is very different and approximates that of *A.* (*Limodromus*) *angusticollis*, from which it is distinguished by its much broader and shorter thorax, with obtuse and strongly reflexed hind angles, and by the much greater width and relative size of the elytra.

The species belonging to Eschscholtz's and Motschulsky's genus *Limodromus* differ from the *Anchomeni* not only in facies, but in the short and broad ligula scarcely visible above the root of the labial palpi; the same organ being narrow and porrect in *Anchomenus*. *Platynus* seems to me also a very good group, and I cannot but think it was a retrograde step in the science, to fuse these all into one genus with the name first of *Anchomenus* (held for some years) and then of *Platynus*.

A. (*Limodromus*) *magnus*, n. sp.

Elongatus vix convexus, niger, nitidus; antennis, palpis, tibiis et tarsis piceis; capite postice abrupte angustato; thorace breviter quadrato, lateribus explanatis, rufo-piceis, paulo rotundatis, postice paulo (vix sinuatim) angustato, angulis posticis obtusis reflexis, foveis basalibus punctato-rugatis; elytris valde elongatis, latis, oblongis, apice valde sinuatis, suprà fortiter striatis.

Long. 7 lin. ♂ ♀.

Hiogo; Nagasaki. Also at Kiu-Kiang on the Yang-tsze and at Shanghai, in China; apparently common.

Distinguished from *A. protensus* by the more elongate thorax, more gradually narrowed behind and with pitchy-rufous explanated margins. The elytra too are very much longer. The thorax is less than one half the width of the elytra, a little broader than long, with rather wide explanated margins, which are turned up, especially at the obtuse hind angles, and are more or less rufous-pitchy in colour. The elytra are of great relative dimensions, more than three times the length of the thorax. The legs and tarsi are as in *protensus* and *angusticollis*.

Anchomenus leucopus, n. sp.

Gracilis, niger parum nitidus; antennarum scapo palpisque rufo-testaceis, pedibus albo-testaceis; thorace elongato-quadrato-cordato, angulis anticis acutis, posticis rectis; elytris oblongo-ovatis, fortiter punctato-striatis, interstitio 3io tripunctato.

Long. 4 lin. ♂.

Tango; two examples.

Allied to *A. prasinus* and *extensicollis;* dull black above and beneath, contrasting with the white legs. The antennæ are very elongate, dull black, except the basal joint which is tawny-reddish. The palpi are long and slender and of a redder testaceous tint than the legs. The head is more narrowed behind the eyes than in *A. prasinus*. The thorax is moderately elongated, with acute anterior angles, sides softly rounded anteriorly, sinuate-angustate posteriorly and with almost acute hind angles; the surface is strongly wrinkled transversely, the wrinkles mingled with punctures which are much denser on each side of the base. The elytra are less ovate than in *A. prasinus*, the striæ very deep and sharp, with a very regular punctuation; the third interstice has in its middle three punctures.

A. (*Agonum*) *daimio*, n. sp.

Species elegantissima. Elongato-ovatus, gracilis, flavo-testaceus, capite vittâque latâ suturali viridi-æneis.

Long. 3½ lin. ♂ ♀.

Yokohama; also in China, at Foochow.

Similar in form to *A. puellus*. Head above shining brassy-green, smooth; parts of the mouth and scape testaceous-tawny, the rest of the antennæ being black. Thorax

slender, ovate; anterior angles distinct, rectangular; posterior rounded; surface smooth and shining, testaceous-red. Elytra elliptical, sharply but finely punctate-striate; testaceous-red, with a broad brassy-green sutural vitta reaching to the 4th stria and extending from the base very nearly to the apex, where it ends in a point on the suture; the 3rd interstice has three large punctures; the shoulders are rounded, but prominent and produced forward (the marginal fold being strongly incurved), and the apex is strongly sinuate. The underside of the head is black, the rest of the under-surface and legs testaceous tawny-yellow.

A. (*Agonum*) *chalcomus*, n. sp.

A. scintillanti (Bohem.) proxime affinis, at differt corpore subtus omnino nigro-piceo. *A. parumpunctato* similis sed gracilior, thoraceque angustiori. Subtus nigro-piceus, suprà capite et thorace viridi-æneis, elytris cupreis, antennis palpisque piceis, pedibus piceo-rufis; thorace parvo subquadrato, angulis anticis acutis, posticis rotundatis, margine anguste explanato, reflexo, rufescenti, postice angustato paululum sinuato, suprà impunctato; elytris acute striatis, interstitio 3^io^, 4to vel 5to punctato.

Long. 3½ lin. ♂ ♀.

Hiogo; Nagasaki.

Very closely allied to the common Chinese *A. scintillans* (Bohem.), from which no difference is perceptible, except the abdomen being pitchy-black (like the rest of the under-surface) instead of testaceous. The antennæ are rather darker pitchy-red, and the surface of the thorax smoother, with narrower and much less pallid explanated lateral margins. Both species are also very closely allied to the Siberian *A. bicolor* (Dej.) which has paler, livid-brown and only slightly æneous elytra, and rather longer thorax. The colour of the elytra in *A. chalcomus* is always moderately bright cupreous, similar to *A. parumpunctatus*. *A. fallax* (Moraw.) is another allied species, differing in the broader thorax, not much narrower at the base than the elytra.

A. (*Agonum*) *impressus*, Panz. et auctor.; Morawitz, Beitr. p. 43.

Hakodadi.

A. (*Agonum*) *quadripunctatus*, De Geer; Moraw. l. c. p. 43.

Yesso.

I have not seen Japanese specimens of either of these species.

Orthotrichus cymindoïdes, Dej. Spéc. Gen. v. p. 371.

Hiogo.

One example, in no respect differing from Egyptian specimens.

Subfam. TRECHICHINÆ.

Trechichus Japonicus, n. sp.

Flavo-testaceus, capite suprà et infrà (partibus oris exceptis) nigro, elytris, præcipue prope apicem, leviter infuscatis, indistincte striatis, interstitio 3^io^ tripunctato; thorace prope angulos anticos levissime rotundato, deinde subrecte usque ad basin angustato, angulis posticis obtusis, margine laterali anguste fusco.

Long. $1\frac{1}{3}$—$1\frac{1}{2}$ lin. ♂ ♀.

Closely allied to *T. fimicola* (Wollast.) from the Cape Verde Islands. It is a little larger, less glossy, sides of thorax distinctly less rounded, and apex of the elytra less distinctly black. As in other species of *Trechichus*, and to a less degree *Mizotrechus*, the 8th stria is more sharply impressed than the rest, flexuous in the middle and led round the apex, at some distance from the margin, to the end of the suture, causing the discal surface of the elytra to form a slight fold over the impressed line.

This species has a tooth in the emargination of the mentum, and therefore differs from the definition of *Trechichus* given by Leconte after Zimmerman. I can confirm the statement of these authors that the mentum is toothless, in so far as I failed to distinguish a tooth in a specimen of *T. umbripennis* showed me by Dr. Leconte. It is so difficult, however, to be sure, without dissecting a specimen, that I think it unadvisable to form a new genus on this point of difference, until the North American species have been thoroughly re-examined.

The present species, on dissection, proves to have a narrow horny ligula surmounted by two setæ, with paraglossæ adherent to the upper angles, and there obliquely truncated upwards and outwards, without being longer than the ligula; a very similar formation exists in the genus

Lelis, subfam. Coptoderinæ. The anterior tarsi of the ♂ have four very slightly dilated ovate joints; and as far as I can observe, under the compound microscope, all four joints are furnished with membranous scales underneath. As, however, the closely allied genus *Mizotrechus* offers only three dilated joints, with scaly palms, in the ♂ (more triangular than in *Trechichus*), I am inclined to doubt the accuracy of the observation with regard to *Trechichus*, the minute size and hairiness of the tarsi rendering it extremely difficult.

With regard to its other characters, the lobes of the mentum are prolonged at the apex into fine points; the labrum is quadrate and entire at the apex; the mandibles and maxillæ are long and slender, the last joint of the palpi tapering to a point, as in *Trechus*. The affinities of the genus, together with *Mizotrechus*, lean certainly towards *Diploharpus*, a genus of *Anchomeninæ*, but the *adherent paraglossæ* remove it from the *Anchomeninæ;* and as the elytra are not truncated, but broadly rounded, it cannot be placed in the *Coptoderinæ* subfamily of Truncatipennes, to which it is allied in many respects. Baron Chaudoir pointed out, long ago, the relationship between *Diploharpus* and *Stenognathus*. There remains no alternative, therefore, but to place the two genera in a separate subfamily, which I think forms an additional link, to others already known, between the *Anchomeninæ* and the *Truncatipennes*.

The genus *Trechichus* is widely distributed. I have seen specimens from North America, the Cape Verde Islands, Penang and Australia, besides Japan, belonging to very closely-allied species.

Pentoplogenius exiguus, Morawitz, Beitr. p. 25, t. 1, f. 10.

Hakodadi; "one example, female."

A curious little insect (3¼ millim.), resembling, according to Morawitz, *Trechichus* (Lec.). The elytra are not truncated, but rounded; therefore it cannot belong to the *Lebiinæ*, where the author places it. The terminal joint of the palpi is conical, as in *Trechichus;* but the bilobed labrum effectively distinguishes the genus. I have not seen anything from Japan agreeing with this description, but have no doubt that it belongs to the subfam. Trechichinæ. It may be remarked that a species of the allied genus *Mizotrechus*, viz., *M. lævigatus*, has the labrum somewhat deeply notched at its apex.

Subfam. Abacetinæ.

Abacetus leucotelus, n. sp.

A. convexiusculo (Chaud.) proxime affinis, at differt antennarum articulis 9—11 albo-testaceis. Angustus, convexus, suprà olivaceo-æneus nitidus, palpis pedibusque flavo-testaceis, antennis articulis 1—3 ferrugineis, 4—8 nigris, 9—11 albo vel flavo-testaceis; thorace antice et medio fortiter rotundato, prope basin constricto, angulis posticis productis acutis, medio basi grosse sparsim punctato; elytris profunde striatis, interstitiis subplanis, 3^io^ unipunctato, margine postico rufescenti.

Long. 2¼ lin.

Nagasaki; one example. A second was taken by Mr. Lewis on the Yang-tsze Kiang.

By its narrowish, convex figure, and bright brassy colour, resembling a *Dyschirius*. The species is easily recognizable from the allied forms *A. convexiusculus*, *antiquus*, &c. by the whitish apical joints of the antennæ.

Subfam. Drimostominæ.

Stomonaxus striaticollis, Dej. Spéc. Gen. v. 747; Chaudoir, Annales Soc. Ent. Belg. tom. xv. 1872.

Nagasaki; abundant, under stones in moist places. Also taken by Mr. Lewis abundantly in China.

St. platynotus, n. sp.

Oblongus, latissimus, niger, nitidus; partibus oris, antennis, pedibusque piceo-rufis; antennis articulis 4—11 minus dilatatis, cylindrico-compressis; thorace latissimo, apud basin quàm elytris haud angustiori, antice paulo angustato, limbo obscure piceo-rufescenti, sulcis basalibus angustis; elytris sulcato-striatis.

Long. 4 lin. ♀.

Nagasaki; one example.

Differs from the other species of the genus in its broad *Oödes*-like shape, and in the thorax not being at all narrowed behind; also in the unthickened antennal joints. It has, however, the other chief characters of *Stomonaxus*. The anterior tarsi of the ♀ have their 1st and 2nd joints produced at their inner apex into a long tooth; the middle and hind tarsi are slender, smooth above and grooved only on the sides. The anterior tibiæ are dilated at the apex, and their rounded outer edge furnished with a row of extremely strong spines.

Subfam. Trigonotominæ.

Trigonotoma Lewisii, n. sp.

Elongata, gracilis, convexa; capite thoraceque suprà læte aureo-cupreis nitidis, elytris cupreo-nigris, iridescentibus; antennis, pedibus corporeque subtus nigro-piceis; thorace rotundato-cordato, angulis posticis valde obtusis; elytris fortiter punctato-sulcatis.

Long. 8 lin. ♂.

Hiogo; Nagasaki, on Mount Mitsyama.

Differs from the Chinese *T. Dohrnii* by its smaller size and narrower form, and by the deeply sulcate elytra. Head as in that species; labrum semicircularly emarginated; palpi piceous-tawny; labials in the ♀ broadly triangular; surface brilliant coppery. Thorax of the same brilliant copper colour as the head, much less quadrate than in *T. Dohrnii*; sides very strongly rounded, more narrowed behind than in front, with the hind angles obtuse, almost rounded; surface almost smooth; base without punctures, except faint indications in the broad foveæ. Elytra shining coppery-black, with iridescent reflections; striæ forming broad and deep sulci from base to apex; strongly crenulate-punctate. The antennæ are strongly geniculated; black, rufescent towards the tips. The sides of the prosterna and metasterna are very coarsely punctured.

Triplogenius ingens, Morawitz (*Omaseus*), Beitr. Käferf. Ins. Jesso, p. 54; Chaudoir, Ann. Soc. Ent. Belg. t. xi. p. 154; *Omaseus magnus*, Motsch. Etud. Entom. 1860, p. 5.

Hiogo; Nagasaki, abundant. Also China, apparently common.

Tr. cuprescens.

Trigonognatha cuprescens, Motsch. Etud. Entom. 1857, p. 26.

Simoda.

Mr. Lewis did not meet with this species, in which the thorax and elytra are described as cupreous, and the striæ of the elytra as deep and impunctate.

Subfam. Pterostichinæ.

Pœcilus planicollis, Motsch. Etud. Entom, 1860, p. 5; *P. cupreus*, L., Moraw. Beitr. p. 44 (?).

Nagasaki; Awomori.

The few Japanese specimens I have seen all differ from

P. cupreus in the longer thorax, the sides of which are less rounded, and fall less obliquely to the posterior angle, thus causing a rather broader postero-lateral margin. The basal foveæ are in the same position as in *P. cupreus*.

P. lepidus, Fab. et auctor.

Hakodadi (Morawitz).

Mr. Lewis's collection does not contain this species.

Pterostichus (*Lagarus*) *sulcitarsis*, Morawitz, Bull. Ac. St. Petersb. v. 1863, 250; id. Beitr. Käferf. Ins. Jesso, p. 46.

Hakodadi. Also coast of Manchuria.

Mr. Lewis did not meet with this species, distinguished by its smooth thorax, with a sharply-marked, linear, basal fovea, like the *Abaceti*. It is curious that the description almost exactly suits the North American *Pt.* (*Lagarus*) *erythropus*, Dej.

Pt. (*Lagarus*) *microcephalus*, Motsch. Etud. Entom. 1860, p. 6; *Pt. nimbatus*, Moraw. Bull. Ac. St. Petersb. v. 1863, 325; id. Beitr. p. 48.

Hiogo; Nagasaki, abundant.

The prosternal process is margined at the apex, as in the typical *Lagari;* but the palpi are decidely truncated in the ♂, less so in the ♀.

Pt. (*Lagarus*) *procephalus*, n. sp.

Oblongus, nigro-nitidus, palpis testacco-rufis, antennis pedibusque picco-rufis; capite elongato, oculis vix prominulis; thorace longo, lateribus æqualiter arcuatis, basi utrinque foveis duabus elongatis profundis punctatis, angulis posticis obtusis sed dentatis; elytris iridescentibus, fortiter striatis, striis crenulatis; interstitiis subplanis, 3^io^ unipunctato; corpore subtus lateribus grosse punctato.

Long. 4 lin. ♂ ♀.

Nagasaki; abundant.

A species distinguished by its rather long head and scarcely prominent eyes. The anterior angles of the thorax are acute, but not produced, as in *Pt. microcephalus;* the sides are regularly rounded, and the posterior angles would be rounded off, were it not for a small projecting tooth. There is a very short scutellar striole.

Pt. (*Lagarus*) *subæneus*, Motsch. Etud. Entom. 1860, p. 6 (*Orthomus*); *Lagarus aberrans*, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 251; id. Beitr. p. 49.

Hiogo; Nagasaki, abundant; Hakodadi. Also Eastern Siberia.

Motschulsky's description being recognizable, it is desirable not to displace his name, as was done by Morawitz. Although having the *Oödes*-like form of *Orthomus*, it wants the transverse sulci of the ventral segments which distinguish that genus.

Pt. (*Argutor*) *neglectus*, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 253; id. Beitr. p. 51.

Hakodadi. Also Eastern Siberia.

Mr. Lewis did not meet with this species, of which I have at hand two examples from Eastern Siberia.

Pt. (*Argutor*) *longinquus*, n. sp.

Elongatus, parallelipipedus, picco-niger, nitidus; thorace lateribus rotundatis, angulis posticis obtusis basi utrinque crebre punctato, foveâque angustâ abbreviatâ; elytris striatis, interstitiis latis planis, 3^io^ unipunctato.

Long. 3½ lin. ♂ ♀.

Hiogo; Nagasaki. Also Kiu-Kiang, on the Yang-tsze.

Allied to *Pt.* (*Argutor*) *neglectus*; form of thorax similar, having rounded sides, narrowed rather more behind than in front, and with obtuse, almost rounded, hind angles. But it differs in the striæ of the elytra being fine and scarcely punctulated, with flat interstices, bearing only one puncture on the 3rd. The scutellar striole is always present and of considerable length. The antennæ, palpi and legs are pitchy, the last named only inclined to pitchy-red.

Pt. (*Lyperus*) *prolongatus*, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 251; var. *fuligineus*, id. loc. cit. p. 325.

Hakodadi; E. Siberia.

Mr. Lewis's collection does not contain this species, which has rounded hind angles to the thorax.

Pt. (*Lyperus*) *Noguchii*, n. sp.

Pt. elongato staturâ simillimus, at differt thoracis lateribus ante angulum posticum sinuato angulis fere acutis.

Nigerrimus, nitidus, antennis apice, palpis tarsisque piceo-rufis; thorace cordato ut in *Pt. elongato*, utrinque foveâ latâ rugoso-punctatâ, plicâ laterali, cum margine haud connatâ.

Long. $6\frac{1}{2}$—7 lin. ♂ ♀.

Nagasaki. Also at Kiu-Kiang, on the Yang-tsze. Many examples.

So closely allied to the South European *Pt. elongatus*, that the differences in the form of the thorax seem to be the only distinguishing character. The general form is moderately elongate and parallel; the head precisely similar. In the thorax the size and lateral rounding is the same; but the anal angle is strongly salient and sharp at the tip, causing a sinuation before it of the lateral margin; with this is associated a peculiarity in the fold which bounds the large thoracic basal foveæ; instead of blending with the lateral rim, it continues separate to the base. The elytra are punctate-striate.

Pt. (*Omaseus*) *fortis*, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 252.

Kawachi; Hiogo. Also south coast of Manchuria.

Allied to the European *Pt. niger*, and still nearer to the Siberian *Pt. Eschscholtzii*.

Pt. (*Omaseus*) *rotundangulus*, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 252; id. Beitr. p. 53.

Hiogo. Also Eastern Siberia, whence I have many examples.

Allied to *Pt. anthracinus*.

Pt. (*Omaseus*) *thorectes*, n. sp.

Subellipticus, convexus, nigro-piceus; palpis, antennis pedibusque rufo-piceis; thorace magno, lateribus arcuatis, angulis anticis productis acutis, posticis obtusis sed apice denticulatis, foveis baseos utrinque grosse punctatis, bistriatis, plicâque laterali a margine separatâ; elytris oblongo-ovatis, fortiter punctulato-striatis, sine striolâ scutellari, interstitio 3^{io} bipunctato; subtus lateribus grosse punctato. ♂ segmento ultimo ventrali medio concavo, lævi.

Long. $3\frac{1}{2}$—$4\frac{1}{2}$ lin. ♂ ♀.

Of shorter and more elliptical form than the typical *Omasei*; thorax equal in length to two-thirds of the elytra; sides arcuated, a little more narrowed behind than in

front. Head as in *Omaseus* and *Steropus*, with thick neck and prominent eyes, punctured above, most distinctly so on the sides. The anterior angles of the thorax are produced, the hind obtuse, but with a dentiform projection; the basal fovea large, deep, bistriated and punctured; externally a fold runs parallel to the lateral margin and reaches the base. Elytra not wider than the thorax; narrowed and sharply rounded at apex. Palpi stout; terminal joints rather ovoid-cylindrical, but sharply truncated. Prosternal process margined. Metasternal epimera about as broad as long.

Pt. (*Omaseus*) *Japonicus*, Motsch. Etud. Entom. 1860, p. 6.

I have seen no specimens to which Motschulsky's description applies.

Pt. (*Platysma*) *subovatus*, Motsch. Etud. Entom. 1860, p. 6; Moraw. Beitr. p. 56.

Hakodadi. Also south coast of Manchuria.

Mr. Lewis did not meet with this species.

Pt. (*Steropus*) *orientalis*, Motsch. Ins. d. l. Sibérie, p. 151; Morawitz, Beitr. p. 58.

Yessô.

Mr. Lewis did not meet with this species, of which I have examined a large series from Eastern Siberia.

Pt. (*Steropus*) *tropidurus*, n. sp.

Pt. madido major, magis elongatus, niger nitidus, thorace lateribus parum rotundato sed valde angustato, angulis posticis oblique obtuse truncatis, foveis basalibus latis, vagis, crebre rugoso-punctatis, absque plicâ laterali; elytris postice paululum dilatatis, fortiter striatis sed interstitiis planis, striis fundo punctulatis; corpore subtus lævi.

Long. 8 lin. ♂ ♀.

♂ segmento ultimo ventrali, medio basi tuberculo elongato valde compresso; ♀ latissime rotundato.

Hiogo.

The elytra are much longer in proportion than in *Pt. madidus*, with the shoulders rather more advanced; the striæ are very strongly and sharply impressed, with faint transverse punctures in their bottom; the interstices are plane, and the third has three punctures. The head is

very similar to that of *Pt. madidus;* the palpi are rather more slender, but are sharply truncated; palpi, apical part of the antennæ and tarsi are rufescent. The thorax is much narrowed towards the base, and at the hind angles shows a distinct oblique truncature; the basal foveæ are wide and shallow, and closely rugose-punctate, the lateral fold is entirely wanting.

Pt. Thunbergi, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 325; id. Beitr. p. 57.

Hakodadi. Not met with by Mr. Lewis.

If I have rightly determined this species from specimens taken by Mr. A. Adams in Yesso, it seems to me to belong rather to *Steropus* than to *Pterostichus*. In general form it approaches *Pt.* (*Steropus*) *tropidurus*, but is distinguished at once by its impunctate base of thorax and the long simple basal foveæ.

Pt. sphodriformis, n. sp.

Elongatus, gracilis, piceus nitidus, pedibus ferrugineis; capite pone oculos incrassato, deinde angustato; thorace elongato, cordato, angulis posticis rectis, basi utrinque unifoveato, punctato; elytris elongato-oblongo-ovatis, parum convexis, thorace antico vix latioribus, apice sinuatis, fortiter striatis, interstitio 3^io^ tripunctato; striolâ scutellari brevissimâ obliquâ; tibiis anticis, apice excepto, haud spinulosis.

♂ Segmento ultimo ventrali apice foveâ magnâ profundâ excavatâ, margine apicali fortiter sinuato.

Long. 8½ lin. ♂ ♀.

Hiogo; four examples.

A fine, elegantly-shaped species, reminding one of the *Sphodri;* also closely resembling *Pt. rufipes*, but much larger. The general colour is pitchy-black or brown, highly polished; the abdomen and palpi rather lighter, and the legs brighter ferruginous. The head is similar in form to *Pt. fasciato-punctatus* and others, but the mandibles are longer and straighter. The thorax has not very prominent anterior angles; it is then rotundate-dilated, and before the middle begins gradually to narrow in an incurved line to the basal angles, which are rectangular; the disk is very smooth; the basal foveæ form long striæ, and their vicinity near the base is faintly punctured. The

elytra are very long, and not broader than the widest part of the thorax; the strongly-impressed striæ are faintly punctulate; the underside is glossy. The antennæ are longer and more slender even than in *Pt. fasciato-punctatus*. The palpi also are long and slender, and the apical joints obtuse at the apex. The metathoracic episterna are very small, and as broad as long.

Pt. Yoritomus, n. sp.

Picco-niger politus, palpis pedibusque castaneo-rufis; capite post oculos modice incrassatis; thorace quadrato, antice modice rotundato et post medium sinuatim angustato, angulis posticis rectis; basi toto punctato utrinque foveâ elongatâ lineari, alterâque parvâ exteriori extus plicâ marginatâ; elytris elongato-ovatis, fortiter striatis, interstitiis convexis, 3^io^ tripunctato.

Long. 5½—6 lin. ♂ ♀.

♂ Segmento ultimo ventrali simplici.

Nagasaki; on Mt. Mitsyama.

Shape similar to *Pt.* (*Platysma*) *oblongo-punctatus*, glossy pitchy-black or brown; legs and palpi chestnut-red. The head and antennæ are very similar to those of *Platysma*, but the palpi are sharply truncated, and the metathoracic episterna are much shorter. The thorax is rather convex, and very smooth and glossy; the anterior angles not produced, the sides gently rounded to beyond the middle, then sinuate-angustate to where the rectangular hind angles slightly project; the base is coarsely but faintly punctured; the larger fovea is long and linear, and there is an exterior much shorter one bounded on the outside by a fold which extends to the hind margin. The elytra are deeply striated, the striæ very faintly punctulate, the interstices convex; the posterior sinuation is distinct. Underneath the sides of the thoracic and of basal abdominal segments are very strongly punctured.

Curtonotus giganteus, Motsch. Ins. d. l. Sibérie, p. 173, t. 8. f. 1.

Nagasaki; Awomori. Also North of China. Frontiers of E. Siberia, towards Mongolia (Motschulsky).

The largest known species of the genus, 9—10 lines in length; remarkable also for the large and especially broad head. The thorax is similar in shape to that of *C. aulicus*, but the widest part is much nearer the anterior angles, and

it is more rapidly narrowed towards the base; the hind angles are moderately produced and acute, the whole base and anterior border coarsely punctured, the lateral plica separated from the lateral margin. The striæ of the elytra are sharp, narrow, and punctulated, the interstices plane. The whole insect is glossy black, except the palpi, which are tawny-red; but the antennæ are sometimes rufescent.

Although Motschulsky gives $7\frac{1}{2}$ lines only as the size of his species, and says the thorax is only a little narrowed behind, I think it is the same as the Japanese one, especially as I have found specimens in a collection made in the North of China.

C. nitens, Putzeys, Etudes sur les Amara, p. 234.

Hiogo; Nagasaki; many examples. Also Manchuria, Sze-Chuen, and the North of China.

C. Hiogoensis, n. sp.

Latior, minus convexus, oblongo-ovatus, piceus nitidus, antennis, palpis, tarsisque testaceo-fulvis; thorace valde transverso, lateribus modice et subæqualiter rotundatis, angulis posticis obtusis sed apice paulo prominulis; elytris punctato-striatis, interstitiis paulo convexis.

Long. $6\frac{1}{2}$ lin. ♂ ♀.

Hiogo.

Of broader and more ovate form than its allies. Thorax very little narrowed towards the base; exactly twice broader than long, the broadest part at the middle or a little before, at the base no narrower than at the apex, the sides not sinuated posteriorly, falling obliquely on the base, but the hind angles slightly projecting, although not quite rectangular; anterior border smooth; posterior not much punctured except in the foveæ; fold sharp and distinct. Sides of the breast and abdomen thickly punctured; middle of abdomen, especially at the apex, finely punctured.

Bradytus ampliatus, n. sp.

Latissimus, breviter oblongus, piceus vel picco-fulvus, thoracis et elytrorum (late) marginibus, antennis, palpis et pedibus pallidioribus; capite brevissimo, obtuso, foveis frontalibus latis, rugosulis; thorace valde transverso, lateribus vix rotundatis, late explanatis, antice plusquam postice angustato, angulis posticis acutis, basi toto crebre

rugoso-punctato ; elytris thorace paulo latioribus, fortiter punctulato-striatis, interstitiis paulo convexis ; tibiis anticis apice extus longo acute productis.

Long. $3\frac{1}{2}$—$3\frac{3}{4}$ lin. ♂ ♀.

Var. Nigro-piceus, palpis, antennis pedibusque testaceo-rufis ; thoracis margine explanato solùm pallido.

Sand Hills at Kobé. Dark var. also at Hiogo.

Variable as to colour ; the var. with concolorous dark-pitchy elytra seems widely distinct from the type, which is of a tawny-brown hue, with a pale border to the elytra occupying interstices 7—8 ; but intermediate varieties occur. The paler (and more abundant) form is very much broader than the European *H. fulvus*. The thorax is broader (twice as broad as long), and has wider explanated margins. The lateral curvature of the thorax is similar to that of *B. fulvus*, but the anterior angles are more produced. The anterior tibiæ are produced at their exterior apical angle into a long pointed lobe, and the outer edge is much flattened and serrated. The sides of the breast and abdomen are thickly and coarsely punctured.

B. simplicidens, Morawitz, Beitr. z. Käferf. d. Ins. Jesso, p. 60 ; *Acrodon Uralensis*, Motsch. Etudes Ent. 1860, p. 7 ?

Nagasaki ; Osaka ; Yesso.

Allied to the European *B. consularis*.

Amara (*Celia*) *chalcophœa*, n. sp.

Modice convexa ; testaceo-fusca, vel piceo-fusca, æneo- vel cupreo-tincta ; antennis, palpis et pedibus testaceo-rufis ; oculis exstantibus ; thorace transversim quadrato, postice haud angustato, angulis posticis paulo productis, basi omnino punctato, foveis utrinque rotundatis duabus, et plicâ exteriori ; elytris thorace latioribus, ovatis, punctato-striatis, striolâ scutellari elongatâ, interstitiis ♂ convexis, ♀ planis.

Long. 3—$3\frac{1}{4}$ lin. ♂ ♀.

Hiogo ; Nagasaki ; abundant.

In the form of the thorax and elytra similar to *A. Quenselii* ; but eyes much more prominent. The thorax is a little narrower than the middle of the elytra, owing chiefly to the latter being gradually dilated to the middle, whence they are narrowed again to the apex. The base of the thorax is coarsely and thickly punctured, and somewhat

depressed; the two foveæ on each side nearly equal, very distinct and rounded; the exterior one is bounded by a raised wheal. The elytra (and under-surface) vary in colour and amount of metallic lustre; their ground colour is, however, always more or less rufo-piceous, which colour appears in the margins of the darkest specimens. The anterior tibiæ are not especially dilated, and their external edge has a few longish bristles.

A. (*Celia*) *laticarpus*, n. sp.

Ovata, valde convexa, nigro- vel fusco-picea; antennis, palpis pedibusque testaceo-rufis; thorace transversim quadrato, elytris multo angustiori, antice et postice paulo angustato, angulis posticis prominulis, foveis duabus utrinque vix punctatis, exteriori multo minori et absque plicâ marginali; elytris striis vix punctulatis, striolâ scutellari brevi ibique interstitio dilatatâ; tibiis anticis ad apicem dilatatis, parte dilatatâ extus breviter 5-spinosâ.

Long. 3 lin. ♀.

Hiogo; two examples.

The species would be almost as well-placed in § *Leiocnemis* as in § *Celia;* but the great width of the thorax gives it an appearance different from that of the species placed in *Leiocnemis.* The head is very short, and the eyes prominent. The thorax is twice as broad as long; more narrowed in front than behind, with anterior angles standing far away from the sides of the head, and the hind angles obtuse, except a small triangular projection; the base is smooth in one specimen, and has a few punctures in the foveæ and near the hind angle in the other; there is scarcely any trace of fold or wheal on the outerside of the exterior fovea. The anterior tibiæ are rather suddenly dilated near the tip, the dilation much rounded, and its outer edge furnished with a row of 5 short and stout spines.

Amara chalcites, Zimmerman, Monogr. Amar. p. 34; *similata* var., Dej. Spéc. Gen. iii. p. 46; *congrua*, Moraw. Beitr. p. 62; *similata* (*Gyll.*), Motsch. Etudes Ent. 1860, p. 7?

Nagasaki; Hiogo, abundant; Yesso (Morawitz).

A species closely allied to the common European *A. ovata* and *similata*, having the broad shape of the former and the coloration of the legs of the latter.

A. obscuripes, n. sp.

A. spretæ affinis, paululum latior, suprà obscure ænea, antennis articulis tribus basalibus rufis, pedibus nigris, tibiis et tarsis piceis, ♂ tibiis intermediis curvatis.

Long. $3\frac{1}{2}$—$3\frac{3}{4}$ ♂ ♀.

Nagasaki; several examples.

Resembles *A. spreta*, but a little broader, the thorax especially broader, and not so gradually narrowed in front. The antennæ have three red joints at the base, and the legs are black, a slight reddish pitchiness being observable on tibiæ and tarsi on close examination; the palpi black. The hind margin of the thorax is nearly straight, and the hind angles not at all produced, but rectangular, their apices being slightly rounded; there is a distinct round fovea just within the angle, and a short oval one distant from the hind margin, and much nearer the dorsal line than the hind angle; the base is smooth or nearly so. The elytra are strongly striated, the interstices convex, most so at the apex, which is considerably prolonged, as in *A. acuminata*.

Group 5. *Bipalmati*.

Subfam. Patrobinæ.

Patrobus flavipes, Motschulsky, Bull. Moscou, 1864, ii. p. 191; Chaudoir, Ann. Soc. Ent. Belge, t. xiv. p. 40.

Nagasaki; Yang-tsze-Kiang and Hong Kong, China.

Diplous caligatus, n. sp.

Depressus, nigro-piceus, antennis rufo-piceis, palpis testaceo-rufis, pedibus obscure piceis, femoribus testaceo-fulvis; capite sulcis crebre punctatis; thorace cordato, antice rotundato post medium fortiter angustato, angulis posticis rectis; supra rugoso-punctato, disco lævi nitido; elytris elongatis, profunde punctulato-striatis, striâ 3ia tripunctatâ; subtus thorace et abdominis basi punctatis.

Long. $5\frac{1}{2}$—6 lin. ♂ ♀.

Epimera mesothoracica extus valde dilatata; epimera metathoracica brevia, transversa.

Var. (immaturus?) thorace et femoribus castaneo-rufis.

Kawachi; many examples. Under refuse on banks of rivers.

Diplous is distinguished from *Patrobus* by its flattened body, and the broad bilobed fourth tarsal joint to the four

anterior legs. The fourth tarsal joint is not very distinctly bilobed in *D. caligatus*, but deeply emarginated, although it has the slender palpi which Chaudoir gives as a character of the genus. As his genus *Platidius* is founded chiefly on the emargination of the joint in question, it would be advisable, perhaps, to merge it in *Diplous*. The thorax is similar in form to that of *Patrobus* (*Penctretus*) *rufipennis*. I observe a good generic character in the widely dilated mesothoracic epimera.

Subfam. Trechinæ.

Trechus postilenatus, n. sp.

Tr. disco affinis; angustus, pubescens, fulvo-testaceus, elytris maculâ posticâ transversâ communi nigrâ; thorace elongato-cordato, postice modice gradatim angustato, angulis posticis rectis; elytris punctulatis, punctato-striatis, striis 1—3 versus apicem fortius impressis, lateralibus distinctis.

Long. 2½ lin.

Osaka; one example.

Similar in size, form and colour to *Trechus discus;* but the thorax of quite a different outline; it is longer, the sides anteriorly are much less dilated, and posteriorly much less sinuated, the hind angles being rectangular and not acute. The elytra differ also in all the striæ being visible, and in the first three from the suture, especially, being very much deepened and enlarged from beyond the middle to the apex, so that the junction of the recurved first stria with the third is plainly visible.

T. ephippiatus, n. sp.

T. dorsistriato (Moraw.) proxime affinis, sed multo major. Elongato-ovatus, castaneus nitidus, elytris rufioribus, plagâ magnâ communi nigrâ, palpis pedibusque flavo-testaceis; thorace transversim quadrato, postice paululum angustato, angulis posticis obtusis, apice vix prominulis, lateribus leviter rotundatis; elytris utrinque striis quatuor fortiter impressis et punctatis.

Long. 2½ lin. ♂ ♀.

Var. *T. ægrotus;* omnino flavo-testaceus.

Nagasaki, several examples of the type; the variety is found at Hiogo; closely allied to *T. rivularis* (Gyl.) and to *T. dorsistriatus* (Moraw.). The thorax is short and broad, its sides slightly rounded; it is not much narrowed

behind, and the hind angles are not quite rectangular, with the points scarcely prominent. The elytra are ovate, convex and very glossy, with a large black patch over the suture, which is sometimes smaller and behind the middle, and sometimes oblong extending nearly to the base; there are four punctured striæ, the first three of which are very strongly impressed, but the third ceases before the apex, and the fourth, deep at the base, becomes faint, and disappears beyond the middle of the elytra; there are traces of a fifth at the base. The usual punctures on the third interstice are small and indistinct.

Although the locality of the variety and its appearance are very distinct, I have failed to find the smallest structural difference from the type.

Perileptus Japonicus, n. sp.

Elongatus, sublinearis depressus, pubescens, punctulatus, testaceo-fuscus, antennis basi pedibusque pallide testaceis; frontis lateribus grosse punctatis; thorace cordato-quadrato, postice modice angustato, angulis posticis productis acutis; elytris magis crebre punctulatis opacis, striis quinque, versus apicem obsoletis.

Long. $1\frac{1}{4}$—$1\frac{3}{4}$ lin.

Hiogo.

Very similar in form to *P. areolatus*, but conspicuously longer, and with distinct large punctures on the disk of the thorax. The colour is uniform testaceous-tawny, or rather darker, *i. e.*, testaceous-brown; the basal joints of the antennæ and the legs in either case being a little paler. The elytral striæ on the sides and at the apex are more completely obliterated than in *P. areolatus*.

Group 6. *Subulipalpi.*

Subfam. Bembidiinæ.

Tachys exaratus, n. sp.

Subdepressus, nigro-piceus nitidus, antennis basi pedibusque testaceo-fulvis; thorace breviter quadrato, postice paulo angustato, lateribus antice rotundatis, angulis posticis rectis; elytris striis fortibus quatuor (quintâ etiam distinctâ), quarum duabus primis apicem attingentibus, striolâ recurvâ fortissimâ cum tertiâ fere conjunctâ.

Long. $1\frac{1}{3}$ lin.

Hiogo.

In form and colour closely resembling *T. bistriatus*,

thorax with posterior angles more distinctly rectangular; it differs conspicuously in having four broad and deep elytral striæ, with the fifth also tolerably well marked. The first and second striæ continue deep to the apex; the third is also deep as far as the very strong recurved striole, which it nearly touches; the fourth is of equal length to the third, and the fifth much abbreviated.

T. pallescens, n. sp.

Subdepressus, testaceo-fulvus, capite postice nigro; thorace postice magis angustato, subcordato, angulis posticis prominulis acutis; elytris oblongo-ovatis, striis tribus profundis, quartâ subobsoletâ, 3ia ante striolam recurvam evanescenti.

Long. $\frac{7}{8}$ lin.

Nagasaki.

Allied to *T. bistriatus*, but the elytra rather more ovate, and the colour pallid dingy-testaceous, with the crown and occiput black, and thorax sometimes inclined to rufous. The thorax is much narrowed behind, and the projecting hind angles cause the margin to be markedly sinuated just before them. There are three deep and broad striæ, but the third is faint before reaching the recurved striole; the fourth stria is but slightly traced. There is a large puncture or foveole on the fourth interstice before the middle of the elytra.

T. sericans, n. sp.

Subdepressus, rufo-testaceus, elytris læte sericeo-micantibus, capite postice nigro; elytris post medium fasciâ fuscâ lateraliter late vage dilatatâ, tri-striatis, striâ 3ia vix impressâ unifoveatâ; pedibus flavo-testaceis.

Long. $1\frac{1}{4}$.

Nagasaki.

Allied to *T. fulvicollis;* but elytra more ovate, and with a bright silky gloss. Two striæ only strongly impressed; the third faint and abbreviated, with a large puncture before the middle; the first stria alone reaches the apex, the second and third being quite obliterated long before the apex; the dusky fascia is very vaguely defined, and is dilated irregularly on the sides. The thorax is quadrate, moderately narrowed behind, with the hind angles rectangular and not at all produced.

T. triangularis, Nietner, Journ. Ceylon Br. R. Asiat. Soc. 1857, p. 72; Schaum, Berl. Ent. Zeit. 1863, p. 91; *Bemb. atriceps*, W. Macleay (1871).

Nagasaki. Also at Kiu-Kiang, on the Yang-tsze; Celebes; Ceylon; Egypt (Schaum); Yemen, Arabia; Melbourne and Queensland, Australia.

Differs from *T. sericans* in the dark elytral fascia being black and extended along the suture, and in the striæ being punctured and six in number; the two sutural very deep, and the external ones gradually fainter. Egyptian specimens, as Schaum rightly observes, differ in the black fascia being narrower at the suture; but I have a specimen from Southern Arabia, very similar to those from Egypt, but having the black fascia as in Chinese examples.

T. lætificus, n. sp.

Elongato-ovata, convexa, nigro-nitida, antennis basi, pedibus, elytrorumque maculis utrinque duabus, flavo-testaceis; thorace lato transverso, post medium angustato, angulis posticis rectis, lateribus antice rotundatis; elytris striis duabus fortiter impressis, disco bipunctato, striâ 8va passim profundâ.

Long. $1\frac{1}{4}$ lin.

Nagasaki.

Extremely near *T. Lucasii* (Algiers), but without any trace of a third stria on the elytra. The thorax is distinctly narrower, and the pale spots of the elytra not quite so clearly defined. From *T. quadrillum*, Schaum, it differs in its larger size, deep 8th striæ, &c.

T. fuscicauda, n. sp.

T. ovatus, convexus, castaneo-rufus nitidus, antennis apice capiteque postice nigris, elytris apice fuscis, maculis utrinque indistinctis duabus pallidioribus, dorso utrinque striis punctatis tribus fortissimis; pedibus pallidis.

Long. 1 line.

Nagasaki; many examples.

Of shorter and more ovate form than *T. hæmorrhoidalis*, thorax short and broad; considerably narrowed behind and rounded anteriorly, giving it a cordate appearance; hind angles rectangular and acute at their apices. Elytra ovate, moderately convex; three striæ from the suture are deep and coarsely punctured; a fourth is also visible in the middle, and the eighth is deeply impressed throughout;

the second and third are much abbreviated behind. In colour the elytra are chestnut-red, like the thorax, but there is a large pale spot near each shoulder, and a transverse one towards the apex, which are not sharply defined from the ground colour; and the extreme apex is dingy-brown, though glossy, this latter colour sometimes remounting up the sides of the elytra.

Allied to *T. ornatus* and *Scydmænoïdes* (Nietn.) of Ceylon, but distinguished by its three punctured striæ. *T. Scydmænoïdes* was taken by Mr. Lewis at Kiu-Kiang on the Yang-tze, in China; it appears to be closely allied to *T. geminatus* (Schaum), from Celebes.

T. perlutus, n. sp.

Breviter oblongo-ovatus, convexus, flavo-testaceus nitidus; frontis sulcis angustis distantibus postice divergentibus; thorace valde transverso, antice valde, postice minime angustato, lineis impressis obsoletis, angulis posticis rectis; elytris striâ suturali solùm impressâ, subtili, striâ 8va antice obsoletâ.

Long. $\frac{2}{3}$—$\frac{3}{4}$ lin.

Nagasaki; many examples.

Allied to *T. globulus* (Dej.) of Algiers; but less convex, and entirely pale yellow-testaceous, with the exception of the apical part of the antennæ, which is pale brown. It differs also in having only the sutural stria visible, and that finely impressed; the disk does not show the usual punctures. The recurved striole is fine and curved, and is in the situation of the apex of the third stria. The anterior tibiæ are slender, very obliquely truncated externally at the apex, and furnished with setæ at the upper angle of the truncature. The species is very closely allied to *Bemb. ovatum*, W. Macleay; Queensland.

Tachyta microscopica, n. sp.

Oblongo-ovata, depressa, rufo-testacea, nitida, capite postice elytrisque fuscis; antennis pedibusque pallidis; thorace cordato-quadrato, convexiusculo, angulis posticis rectis; elytris juxta suturam depressis, striâ suturali solùm et fortiter impressâ, disco bipunctato, striolâ recurvâ, foveolâ superiori exceptâ, obsoletâ.

Long. fere $\frac{1}{2}$ line.

Nagasaki; many examples.

Very closely allied to *T. livida*, Bates (Ent. Monthly Mag. vol. viii. p. 13), from Adelaide and Melbourne;

but rather more ovate and less parallel in form; elytra dark brown, not concolorous with the thorax; the hind thoracic angles more rectangular, and the sutural stria very deeply impressed. The sutural stria lies in a sutural depression, both depression and stria beginning at some distance from the base, and continuing to the apex. The recurved striole which in *Tachyta* lies near the lateral margin is not visible in this species; but the large puncture which marks its termination is plainly visible. This is nearly the same in *T. livida*, but a shallow striole is perceptible behind the puncture. There are in both species other large punctures parallel and near to the lateral margin, which represent the eighth stria. The antennæ are short and submoniliform; the anterior tibiæ obliquely truncated externally at the apex, and broader than in *Tachys*.

Tachys atomarius (Wollast.), Cape Verde Islands, is also closely allied to *T. livida*, and has a similar interrupted or obsolete recurved striole. These three form a natural sub-group in the genus.

Tachypus semilucidus, Motsch. Etud. Entom. 1861, p. 24; *T. nubifer*, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 327.

Nagasaki, abundant; Yesso. Also at Hong Kong, in China, and on the banks of the Amur.

Allied to *T. flavipes*, but with dark-pitchy legs, antennæ and palpi, and glossy spots on the elytra. Motschulsky's description is quite recognizable, and has the priority over that of Morawitz.

Bembidium stenoderum, n. sp.

B. impresso affine, suprà cupreo-æneum vix nitidum, antennis scapo pedibusque rufo-testaceis, æneo-tinctis; thorace antice a medio angustato, angulis posticis fortiter productis acutis; elytris fortiter punctato-striatis, interstitio 3^io^ plagis duabus opacis metallicis.

Long. 2½ lin.

Osaka.

Distinguished from the European species of the *paludosum* group by the thorax being scarcely at all rounded on the sides, and gradually narrowed from the middle anteriorly; behind the middle it is not narrowed, although the margin is strongly sinuated, the hind angles being much

produced; the hind margin is cut obliquely on each side; the surface is finely rugulose, shining on the disk but opake on the hind borders; the basal fovea is distant from the angles, short and oblique. The elytra are much narrower than in *B. impressum*, and much more strongly striated; the interstices are more finely sculptured.

B. conicicolle (Motschulsky), from Eastern Siberia, appears to be closely allied to the present species; but the hind angles of thorax are described as rectangular, and the margin straight.

B. (*Notaphus*) *niloticum*, Dej, Spéc. Gen. v. p. 73.

Nagasaki. Also China.

I do not detect any difference of importance between Egyptian specimens and others from the Yang-tsze-Kiang. Mr. Lewis's collection contains a small individual from Nagasaki. The elongation and convergence on the epistome of the frontal grooves distinguishes the species.

B. (*Peryphus*) *cognatum*, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 327; id. Beitr. p. 81; *P. femoratus* (Sturm), Motsch. Etudes Ent. 1860, p. 5?

Nagasaki.

Closely allied to the European *B. Bruxellense*, differing almost solely in the rather longer and less rounded thorax, with less sinuated sides.

B. (*Peryphus*) *lunatum*, Duftsch. et auctor.

Hiogo; Nagasaki.

I am unable to discover any specific difference between Japanese examples and others taken in England.

B. (*Peryphus*) *consummatum*, n. sp.

Depressum, nigro-æneum, antennarum scapo rufo, pedibus piceo-rufis, elytris striis omnibus integris, ante apicem maculâ communi lunatâ flavo-testaceâ.

Long. $2\frac{1}{3}$—$2\frac{2}{3}$ lin.

Kobé; on the beach.

Allied to *B. tibiale*. Body similarly depressed. The frontal furrows are broad, leaving a rather narrow convex space down the middle. The thorax is cyathiform, *i. e.*, very much rounded on the sides (with deflexed anterior angles), and strongly narrowed or constricted near the base; the hind angles are rectangular, the base rugose-

punctured. The elytral striæ are all distinct, from the base to the apex, all the dorsal ones, except the 7th, being very strongly impressed and punctured; the yellow lunate spot is subapical, the apex itself being of the ground-colour. The basal joints of the antennæ and palpi are red; the legs a dingy reddish.

B. (*Peryphus*) *Hiogoense*, n. sp.

B. tibiale proxime affine, differt tibiis et tarsis nigris. Depressum, nigro-æneum, antennarum scapo subtus rufo; thorace quadrato, angulis anticis conspicuis rectis, postice modice angustato, angulis posticis vix prominulus; elytris profunde punctulato-striatis, striâ 3ia bifoveatâ.

Long. $2\frac{1}{2}$ lin.

Hiogo, sandy places. Also on the beach at Kobé.

There is no difference apparent between this species and the European *B. tibiale*, except in the colour of the legs. The head has the same broad frontal furrows; the thorax is less narrowed behind; the hind angles are rather less prominent, and the sharp fold near each angle is longer and more conspicuous. The elytra have the striæ much more strongly marked near the apex. The legs are wholly brassy-black, except in immature specimens, where they are of a uniform brown. The palpi and antennæ are black, except the underside of the scape, which is reddish.

It is closely allied to *B. Gebleri* (Esch.) (= *cœlestinum*, Motsch.?), which has a shorter and broader thorax and is a considerably smaller insect.

B. (*Peryphus*) *lissonotum*, n. sp.

Elongatum, depressum, nigerrimum, cyaneo-relucens; scapo rufo; thorace subcordato, postice angustato, angulis anticis valde deflexis, posticis prominulis acutis, lateribus postice sinuatis, suprà foveâ utrinque basali profundâ, lævi, plicâ laterali nullâ; elytris profunde punctulato-striatis, striâ 6ta vix impressâ, 7ta obsoletâ.

Long. $2\frac{3}{4}$—3 lin.

Hiogo; sandy places.

Of similar narrow, elongate shape to *B. decorum*, surface with a changing bluish, almost opalescent lustre, on a deep glossy-black ground; the scape of the antennæ and extreme base of the palpi alone are reddish. The thorax differs from the allied species in wanting the sharp fold or raised line near the hind angle; the foveæ are unusually

deep and smooth, and the anterior angles dip to the sides of the neck, to which they are closely applied.

Group. 7. *Truncatipennes.*

Section *Eleutheroglossæ.*

Subfam. Odacanthinæ.

Ophionea cyanocephala, Fab. Ent. Syst. Suppl. p. 60.

Nagasaki; common in fenny districts; China; India.

Japanese specimens do not differ from those of Hong Kong and Bengal.

Casnonia flavicauda, n. sp.

C. latifasciæ (Chaud.) simillima; differt elytris apice testaceo-fulvis. Nigro-fusca nitida, antennis articulis 3 basalibus, palpis, pedibus, elytrorumque maculâ magnâ apicali antice ad suturam emarginatâ, testaceo-fulvis; capite intrà oculos solùm (grosse) punctato, thorace grosse haud confertim punctato; elytris fortiter punctato-striatis.

Long. 3—3¼ lin.

Osaka. Also Foochow, China. Many examples.

The head is convex, and gradually narrowed behind the eyes. The thorax is broadest in the middle, gradually narrowed anteriorly, and rather more suddenly so posteriorly to the basal transverse groove. The apical spot of the elytra generally covers the apical third, but deeply emarginated in front on the suture; but sometimes the sutural emargination continues to the apex, and in rare cases the ground colour also indents the spot deeply on each side; the apex itself, however, is never of the ground colour, as in *C. latifascia.* In most examples one or two narrow fulvous streaks extend along the lateral margin nearly to the base. The apical ventral segment is more or less fulvous.

Section *Heteroglossæ.*

Subfam. Galeritinæ.

Drypta lineola, Dej. Spéc. Gen. i. p. 184.

Var. *Japonica,* Bates.

Osaka; one example. There is another from Japan, exactly conformable, in the British Museum.

The Japanese var. or species differs from Chinese specimens in being larger (4½ lines), with thorax more gradually narrowed in front and more constricted near the base, and

tibiæ and tarsi (like the femora, except the black tips) clear fulvo-testaceous. The colour of the antennæ and palpi is the same; the width and length of the red discal vitta of the elytra vary in *D. lineola*, but it always reaches the apex; in *D. Japonica* it does not reach the apex, and the 1st interstice continues dark blue to the end of the suture.

Galerita Japonica, n. sp.

Elongata, robusta, subangusta, elytrorum humeris valde obliquis; nigra; capite, antennis, palpis, thoracisque disco testaceo-rufis; pedibus flavis, femorum apice nigro; capite grosse scabroso-punctato, postice usque ad collum lato subquadrato; thorace elongato-quadrato, antice paulo, postice sinuatim, angustato, angulis posticis rectis sed reflexis et apice rotundatis; elytris elongatis, parallelis, costatis, interstitiis bi-striatis.

Long. 10 lin. ♂ ♀.

Nagasaki; Yokohama; many examples.

Closely allied to *G. nigripennis* (Chaud.), and *G. indica* (Chaud.), from Northern India. Similar in colours and shape, especially in the form of the elytra, rounded and narrow at the shoulders, but not dilated behind. The thorax is as long as broad, not cordate, but narrowing slightly from its broadest part (before the middle) to the obtuse anterior angles; behind it is narrowed a little more, with slightly sinuated sides, which fall rectangularly on the hind angles, although these are blunt at their apices; the black margins of the thorax are more or less broad.

Planetes bimaculatus, Macleay, Annulosa Javanica, p. 28, t. 2, f. 3.

Nagasaki; Hiogo. Under stones, abundant. Also China.

I have compared specimens with Macleay's type (from Java) in the British Museum, and find no other difference than the slight prominence of the posterior angles of the thorax, which seems also to be a little more rounded on the sides in front.

The genus has been erroneously placed in the *Helluoninæ* subfamily, from which it differs in the short truncated labrum and the ligula furnished with very long, narrow paraglossæ, which are nearly three times the length of the ligula, and are strongly curved. The ligula itself is short,

very convex, rounded at the apex, and furnished with many long stiff bristles. The tooth of the mentum is furrowed in the middle and notched at the tip. The sculpture of the elytra (ill-described by Macleay) is like that of the typical *Galeritæ;* sharp ridges or raised lines, with two smaller raised lines in each interval between them.

Subfam. Brachininæ.

Pheropsophus Jessoensis, Morawitz, Bull. Acad. St. Petersb. v. 1863, p. 322; id. Beitr. p. 23, t. 1, f. 9.

Hiogo; Nagasaki. Also North China.

Brachinus scotomedes, Redtenbacher, Reise der Novara, Coleop. p. 5.

Yokohama.

A fine large species (7½ lines), with head, thorax, antennæ and legs testaceous-red, and elytra dull grayish-black, feebly carinated.

B. stenoderus, n. sp.; *B. longicornis,* Motsch. Schrenck's Reise, Coleopt. p. 92? (1860).

Elongatus, rufus, pectore et abdomine fusco-marginatis; elytris cyaneis, convexis, costis acutis septem nitidis, interstitiis granulatis, breviter fulvo-pubescentibus; capite postice elongato, gradatim angustato; thorace angusto, lateribus antice parum rotundatis, postice longe sinuatis, suprà punctulato et transversim striato.

Long. 3½—5½ lin.

Nagasaki; Kawachi, very abundant.

The underside of the body is coloured as in *B. fumans,* except that the dusky border is more distinctly defined. The general shape is also similar to that of *B. fumans,* but the thorax is very different and peculiar in outline, being very little rounded on the sides anteriorly, and *not narrowed* to the anterior angles, which are distinct and not deflexed. The elytra are oblong-ovate, with squared shoulders; the costæ, including the sutural, are seven in number; narrow, sharp and shining, of a darker hue than the blueish-green of the interstices; an eighth costa appears towards the tip in large individuals; the deflexed epipleuræ are blue. The legs and antennæ are rather more elongated than usual.

If the species be the *B. longicornis* of Motschulsky, his

name cannot stand, as the prior *longicornis* of Fairmaire (1858) is a true *Brachinus*.

The species varies much in certain points. In form: the degree of convexity of the elytra is very variable, and so is the amount of abbreviation of the costæ before the apex. In colour: the antennæ are sometimes concolorous tawny-red, but most frequently more or less dusky-red, the duskiness commencing at the third joint in some examples and not before the fifth in others; beneath the episterna are sometimes red, and the sides of the abdomen dusky; more frequently the metathoracic episterna are dusky, like the sides of the abdomen; but in some examples the whole abdomen is fuliginous, and in rare cases the mesothoracic episterna are dusky *and not the metathoracic*. All gradations are found, and the variations do not occur in conjunction.

B. incomptus, n. sp.

Testaceo-rufis, abdominis lateribus infuscatis, elytris cyaneo-nigris; capite postice haud gradatim angustato; thorace fortiter cordato, postice sinuato, angulis posticis haud productis, suprà dense pubescenti, punctulato, parum nitido; elytris oblongis postice leviter dilatatis, costis octo modice elevatis vix nitidis.

Long. $2\frac{1}{2}$—$3\frac{1}{2}$ lin.

Hiogo; Nagasaki.

The eyes are much more prominent than in *B. crepitans*, and the sides of the head behind the eyes are parallel. The thorax is much more rounded on the sides anteriorly than in *B. crepitans*, and more abruptly sinuate-angustate behind; its surface is dotted with dense erect pubescence. The elytra are also pubescent on the somewhat obtuse costæ as well as the interstices.

B. Lewisii, n. sp.

Latus, sordide fulvo-testaceus, pectoris lateribus et abdomine fuscis; elytris acute costatis, nigro-fuscis, plagis utrinque duabus flavo-testaceis, primâ pone medium, discoidali transversâ dentatâ, secundâ apicali quadratâ cum margine apicali flavo conjunctâ.

Long. 5 lin.; lat. elytror. $2\frac{1}{2}$ lin.

Satsuma. One example.

A remarkable species, approaching in form *B. nobilis*, but with the elytra more convex and dilated posteriorly. The head is short, and narrowed almost immediately

behind the eyes; the antennæ become a little browner towards the apex. The thorax is short and cordate, the sides strongly rounded anteriorly, the anterior angles deflexed and scarcely visible, strongly sinuated posteriorly, with produced and acute hind angles; the surface is punctate, faintly rugose, and pubescent, and there is a transverse black vitta on the hind margin. The elytra have distinct but rather obtuse-angled shoulders, which arises from their being dilated immediately from the shoulders towards the apex; there are eight sharp, shining costæ (the eighth becoming obsolete towards the base), the interstices are minutely punctured and opake.

Crepidogaster bicolor.—Brachinus bicolor, Bohem. Eugenies Resa, Coleopt. p. 3.

Kawachi, many examples; China (Bohem.). Under stones in fir woods; crepidates strongly.

Japanese specimens agree in almost every particular with Boheman's description, and it is remarkable (if it be really the same species) that he should not have recognized the species as belonging to his own genus *Crepidogaster*. Its opake surface and thickened antennæ give it a different facies from the *Brachini*, and its tumid, securiform labial palpi are very conspicuous.

Section *Detoglossæ*.

Subfam. Masoreinæ.

Masoreus adelioïdes, Macleay, Annul. Javan. p. 23, t. 8, f. 2.

Nagasaki; under stones on hills.

A species of wide distribution, being found in Java, Bengal, Birmah, Cochin-China, Japan, and Western Australia. I have compared Japanese specimens with others from Saigon and West Australia (from Mr. Du Boulay's collection), without discovering any difference of importance.

Subfam. Dromiinæ.

Dromius quadraticollis, Morawitz, Bull. Acad. St. Petersb. v. 1863, p. 244.

Kawachi; beaten from trees, August. Amur (mouth of the Usuri), Morawitz.

Of the size and colour of *D. agilis*, but with longer and,

behind, rectangular thorax. I doubt whether it can be retained in the genus *Dromius*, as the terminal joints of the palpi taper to a point, and the ligula large, convex, and horny; the legs are similar to those of *Dromius*, the claws pectinated, and the mentum furnished with a tooth.

D. optimus, n. sp.

D. fasciato (Dej.) affinis, at multo major. Elongatus, subangustus, fuscus; antennis, partibus oris, pedibus, thoracisque margine laterali testaceo-fulvis; elytris testaceo fulvis, vittâ suturali basi et postice dilatatâ, alterâ intramarginali, fasciâque angulatâ pone medium fuscis.

Long. $2\frac{1}{2}$ lin.

Nagasaki; under bark of various trees.

Larger and relatively longer, and more parallel-sided than *D. fasciatus*. The thorax is quadrate, much broader than long, moderately narrowed behind, with obtuse, although distinct hind angles; the disk is generally brown with the margins pale, but sometimes one colour blends into the other. The elytra are elongate, the striæ broad and shallow; the brown sutural vitta has a triangular dilatation over the scutellum, and an oblong one at two-thirds the length, after which it terminates; the lateral vitta is of moderately equal width from the humeral to the apical angle, leaving the lateral rim always fulvous; the fascia is very variable in width and in intensity of colour, but it always forms an angle, projecting forward almost as in *D. sigma*.

Apristus striatus, Motschulsky, Coléop. d. l. Sibérie, p. 63.

Hiogo; under sediment in dried beds of rivers. Nertschinsk, E. Siberia (Motsch.).

The Japanese specimens agree very well with the detailed description above quoted; but the size is a little larger, $1\frac{3}{4}$—2 lin., instead of $1\frac{1}{2}$—$1\frac{3}{4}$ lin., a discrepancy the less to be regarded as Motschulsky's measurements almost always err by defect. The forehead has numerous punctures and faint longitudinal striæ, and central depression sometimes large, and communicating with the lateral furrows. The species differs from the European *A. reticulatus* (Schaum) in scarcely anything except the deep striæ, or rather sulci of the elytra; these sulci are punctured on the sides in Japanese specimens. It much resembles *A. subsulcatus*, but the thorax is of a different

shape, narrower, less rotundate, dilated anteriorly, and with less prominent hind angles.

A. rufiscapis, n. sp.

A. striato formâ et colore simillimus, at differt thorace minus cordato, elytris striis nullomodo punctatis, scapoque antennarum rufo. Oblongus, vix convexus, æneo-niger, subnitidus, scapo antennarum piceo-rufo; thorace quadrato mox pone angulos anticos leviter dilatato deinde usque ad basin paulo sinuatim angustato, angulis posticis rectis; elytrorum striis latis, paulo impressis, nullomodo punctatis, 6—8 obsoletis.

Long. $1\frac{3}{4}$ lin.

Nagasaki; one example.

A. secticollis, n. sp.

Angustus, depressus, niger; suprà obscure æneus toto subtiliter sculpturatus, subopacus; thorace cordato, angulis omnibus prominulis, lineâ dorsali profunde insculptâ et utrumque marginem attingenti; elytris haud profunde sed distincte striatis.

Long. $1\frac{1}{2}$ lin.

Tango; one example.

Much narrower than *A. reticulatus*. Dark bronze in colour, the whole upper surface rendered almost opake by minute punctures standing extremely close together, but never confluent. The dorsal line of the thorax forms a sharply-cut furrow, extending from the anterior to the posterior margin.

A. cuprascens, n. sp.

Angustior, depressus, nigro-æneus, elytris fusco-cupreis, late striatis et costatis; fronte haud punctato; thorace angustiori, angulis prominulis, antice vix rotundato postice gradatim angustato, suprà nitido, lineâ longitudinali antice abbreviatâ.

Long. $1\frac{1}{4}$—$1\frac{1}{3}$ lin.

Hiogo; several examples.

Much narrower than *A. striatus*, but broader than *A. secticollis;* surface of head and thorax moderately shining, without denser and coarser punctuation. In the middle of the forehead is an isolated puncture, obsolete in some examples, but no other punctuation is visible. The thorax is conspicuously narrower, and less rounded an-

teriorly than in *A. subsulcatus*, which the species much resembles; behind, the narrowing is long and gradual. The sulci of the elytra are without visible punctures.

Subfam. Cymindinæ.

Cymindis pictula, n. sp.

Depressa, fusco-cupreo-ænea, vix nitida; antennis, palpis, pedibus, elytrorumque margine et maculis duabus fulvo-testaceis; capite post oculos utrinque tumido deinde in collum constricto; antennis brevibus, crassis; thorace cordato, basi medio rotundato, angulis posticis elevatis, acute productis; elytris fortiter striatis.

Long. $2\frac{1}{3}$ lin.

Nagasaki; one example.

The orbit behind the eye is as prominent and nearly as long as the eye itself. The surface of the head is finely alutaceous and sprinkled with punctures; the labrum, palpi, and the short thickened antennæ, are of a more pitchy-testaceous than the legs, which are yellowish-tawny. The thorax is rounded, almost angulated on the sides anteriorly, then gradually narrowed to the hind angle, which projects as a small sharp tooth; the middle of the base forms a short, broad, rounded lobe; the whole surface is somewhat regularly and sharply transverse-striate; the lateral rims are extremely fine. The elytra are very finely punctulate and alutaceous, deeply and simply striated; the lateral margin, a short vitta within the shoulder (extending from the base along the sixth and seventh interstices, with an adjoining spot on the fifth), and a common sutural-apical spot, lying on the first and fourth interstices, emarginate in front on the suture, and scarcely touching the apex, testaceous-tawny. The fourth tarsal joint in the anterior legs is emarginate, in the posterior simple.

C. rivularis, Motsch. Ins. d. l. Sibérie, p. 45; Chaudoir, Bull. Mosc. 1850, iii. p. 85.

Nagasaki; Eastern Siberia.

C. daimio, n. sp.

Elongata, convexa, fulvo dense hirsuta, grosse punctata; fulva, capite, thorace, elytrorumque maculâ apicali bilobâ nigro-cyaneis.

Long. 4 lin.

Nagasaki, on hills 2,000 feet, under stones; three examples.

Allied to *C. Faldermanni* (Chaud.), but the thorax differently shaped, and the pubescence shorter and more erect, &c. Head gradually narrowed (but rather full) behind the eyes, shining blueish-black, coarsely punctured. Palpi and antennæ testaceous-red. Thorax convex, cordate; sides anteriorly strongly rounded, posteriorly narrowed and deeply sinuated, with projecting hind angles, which form broad triangular lobes; the short basal lobe occupies nearly the whole of the base, there being on each side only a rectangular indentation, which leads rather obliquely to the apex of the angle; the whole surface is coarsely and closely punctured; the dorsal line is distinctly marked, the lateral margins not at all explanated. The elytra are very deeply punctate-striate, with convex interstices, and the apex is obtusely rounded rather than truncated; the apical spot is of a brighter steel blue than the head and thorax; along the sides it reaches half-way up the elytra, but it is sinuated in the middle, almost to the apex, by the tawny-red ground colour; the limits of the two colours are well defined throughout.

Subfam. Calleidinæ.

Endynomena Lewisii, n. sp.

Oblonga, subdepressa, erecte pubescens, fusco-picea; antennis, partibus oris, pedibus, marginibusque thoracis et elytrorum rufo-piceis; oculis exstantibus; thorace lato, lateribus antice et angulis anticis valde late rotundatis, longe post medium sinuatim angustatis, angulis posticis obtusis, basi lobo lato brevissimo; elytris quadratis, punctatis, punctulato-striatis.

Long. $4\frac{3}{4}$—5 lin.

Nagasaki; many examples.

Differs from *E. Pradieri* (the only other described species) in the very convex prominent eyes, the head abruptly narrowed behind them; in the rudiment of a basal lobe to the thorax, and the distinctly striated elytra. It agrees with the other characters of the genus, the pluri-setose ligula, toothed mentum, sinuate and rounded labrum, hairy surface of the tarsi, and so forth; and as I have another species from Bombay exactly intermediate between *E. Lewisii* and *Pradieri*, there is reason for referring them all to one genus, giving a little extension to the definition drawn up by Baron Chaudoir. The insect is much

broader than *E. Pradieri*, and much darker in colour, slightly shining. The antennæ are very similar. The head differs only in the greater convexity of the eyes; it is punctate on each side, and has some strigæ towards the base of the antennæ. There is a great similarity in the outline of the thorax, but it is very much broader, and the slight basal lobe is only a further development of the arcuated base-line of *Pradieri*. The elytra are throughout thickly punctulated, and have very distinct punctured striæ. The abdomen and metasternum are punctured and pubescent.

The metathoracic epimera in all three species are very short and transverse-linear.

PARAPHÆA, nov. gen.

Corpus oblongum, vix convexum, glabrum. Caput thorace angustius; oculis modice prominulis. Labrum transversum, antice paulo dilatatum, sinuato-truncatum, angulis rotundatis. Palpi sparsim pilosi, articulo ultimo maxillarium cylindrico, labialium triangulari, truncato. Mentum medio valide dentatum; lobis extus rotundatis, apice obtuse acuminatis, epilobia obtusa haud superantibus. Ligula apice quadrisetosâ; paraglossis per apicem obductis, haud longioribus. Antennæ ab articulo 4to pubescentes. Thorax transversim quadratus, basi late breviter lobatus. Tarsi suprà pilosi; articulo 4to anguste bilobato; unguiculi pectinati.

Closely allied to *Endynomena*, from which it differs in the distinctly lobed base of the thorax. The insect on which it is founded much resembles several Australian species, which differ chiefly in the much shorter pectination of the claws and other characters.

Paraphæa signifera, n. sp.

Rufo-testacea, nitida, elytris vittâ submarginali ad apicem et prope scutellum valde dilatatâ, nigro-piceâ.

Long. 4—4¼ lin. ♂ ♀.

Satsuma.

Of broader form than the allied Australian species *Calleida pacifica*, Erichs. and allies.* Head smooth, narrowed immediately behind the eyes. Thorax much

* Formed into a genus, *Trigonothops*, by Mr. W. Macleay, but since referred by him again to the genus *Calleida*.

broader than the head (eyes included), transverse quadrate; broadly dilated and rounded immediately from the obsolete anterior angles, sides not angulated, narrowed (scarcely sinuated) after the middle, hind angles rectangular and slightly produced; the base on each side the short, but not broad, lobe, is first slightly indented, and then inclined obliquely to the hind angle; the lateral margins are widely explanated, and the disk strigose. Elytra oblong, not dilated behind, broadly subsinuate-truncate; finely punctate-striate; interstices very faintly and sparsely punctulate, here and there slightly convex in the middle; third with two punctures; the dark pitchy-brown colour is very broad at the apex, extending there a little forward along the suture; at the sides it occupies interstices 6—9; at the base within the shoulder it is very narrow, expanding into a spot nearer the suture; if we except the pale margins, the elytra might be described as pitchy-black, with a large tawny-red patch on each, united at the suture.

Bothynoptera perforata, n. sp.

Supra fulvo-fusca nitida, capitis maculis, thoracis lineâ dorsali et marginibus, pedibus et antennarum basi testaceo-fulvis; thorace transversim quadrato; elytris subtilissime striato-punctatis, foveolis magnis quatuor in lineam digestis.

Long. $5\frac{1}{2}$ lin.

Hiogo; three examples, on foliage.

Differs from the description and figure of *B. dorsigera* (Schaum) in the slightly broader thorax and the absence of yellow patch from the middle of the elytra. The whole upper surface is of a fine tawny-brown colour, highly polished; the margins and suture of the elytra are a little lighter, or yellower, in colour; and so are the borders and dorsal line of the thorax, and the sides and large frontal spot of the head. The antennæ are pitchy-red, with the scape yellowish; the palpi also, as well as the whole under surface, are yellowish. The head has two broad and deep frontal foveæ. The thorax does not differ in outline from that of *B. dorsigera*, except in being conspicuously broader. The elytra widen gradually and slightly from base to apex; the latter is broadly truncate and slightly sinuate; the striæ are reduced to lines of very fine punctures, and the interstices are sparsely punctulate. The first and

second of the large foveæ lie over the third stria, the third and fourth over the second.

B. tripunctata, n. sp.

Fulvo-testacea, capite postice, thorace et elytris fusco-piceis; thorace quadrato, angulis et lateribus anticis rotundatis, angulis posticis obtusis; elytris obtuse truncatis, fortiter punctulato-striatis, interstitio 3^io^ tripunctato.

Long. $3\frac{1}{4}$—4 lin.

Tanga, Kawachi; on foliage.

Eyes extremely prominent. The whole head and antennæ are sometimes tawny-yellow, except a dark patch on the crown. The thorax is nearly as long as broad; rounded as usual anteriorly, moderately sinuate-angustate posteriorly, with the hind angles, though prominent, rendered obtuse by the obliquity of the sides of the base. The elytra are dilated posteriorly, but obtusely truncate, the outer angles being rounded, and the truncature not at all sinuate; the surface is deeply striated, and the striæ punctured; the interstices sparsely punctulate; the margins are more or less rufous.

Taicona, nov. gen.

Gen. *Bothynopteræ* proxime affinis; differt mento dente valido armato. Caput, cum oculis valde prominentibus, thorace latius. Labrum antice dilatatum, medio leviter sinuatum, angulis rotundatis. Palpi truncati, haud securiformes. Mentum medio dente valido armato; lobis acute triangularibus, epilobiis acutissimis, longioribus. Ligula quadrisetosa, setis externis longioribus, paraglossis intus infra apicem conniventibus. Elytra fortiter striata, metallica. Tarsi suprà pilosi.

By its hairy tarsi this genus belongs to the section of *Calleidinæ* in Baron Chaudoir's classification to which *Bothynoptera* belongs; but the form and armature of the mentum is quite different; in fact the change of form of this organ in genera so closely allied quite destroys one's confidence in its importance as a systematic character. It is furnished with a large triangular tooth; and the lobes, instead of being broadly rounded at the sides and tip, as in *Bothynoptera*, *Crossoglossa*, &c., taper in a straight line to a pointed apex, surpassed by the spiniform epilobes. The tarsi have the narrow form of those of *Calleida*, with the basal joint, in the posterior feet, nearly as long as the

three succeeding taken together; the claws are dilated, and the pectination remarkably long and close.

Taicona aurata, n. sp.

Testaceo-rufa, nitida, elytris læte viridi-æneis, lateribus aureis,

Long. $3\frac{1}{2}$ lin.

Nagasaki; on foliage.

Head smooth and glossy. Thorax conspicuously narrower than the head; not much dilated and rounded from the anterior angles; strongly sinuated on each side after the middle, but at the base not narrower than at the apex; hind angles obtuse, but projecting; lateral explanated margins rather narrow. Elytra oblong-ovate; three times as wide as the thorax; slightly dilated posteriorly; sinuate-truncate at the apex, with exterior angles of the truncature broadly rounded; surface moderately convex, without distinct inequalities; strongly punctate-striate, with four punctures each on the 3rd and 5th interstices; brilliant brassy-green; sides and apex rich golden.

Crossoglossa latecincta, n. sp.

C. nigro-lineatæ affinissima, at differt vittâ laterali nigrâ latiori. Saturate testaceo-rufa, antennarum articulis 5—11 piceis, elytris vittâ laterali interstitiâ 6—8 tegentiâ æneo-nigrâ.

Long. $4\frac{1}{2}$ lin.

Hiogo; Yokohama; on foliage, like all the other species of the genus. Also Hong Kong, China.

Clayey-red, shining. The greenish-black vitta of the elytra covers the 6th to the 8th interstices in the middle of its course; but near the base it extends also over the 5th, and at the apex it curves a little, leaving the 8th, and extending over the 5th to the 2nd; the surface of the elytra is uneven, causing the striæ to be more deeply sunk in some parts than in others; the striæ are finely punctulate, and the interstices sprinkled with distinct punctures. The head is punctulated, especially in the long frontal furrows. The thorax is not quite so broad as the head, with narrow explanated margins, angulated before the middle, and slightly sinuated, but not narrowed, behind to the obtuse hind angles, which are rendered more obtuse by the obliquely truncated base immediately contiguous; the surface has numerous scattered punctures, which are denser on the anterior border.

The ligula, as described by Chaudoir in instituting the genus *Crossoglossa* (Ann. Ent. Soc. Belg. xv. 180), has numerous setæ. The lobes of the mentum are very widely rounded on the sides, and advanced at the apex, so that the epilobium seems to end on their inner edge.

C. monostigma, n. sp.

Gracilior, testaceo-rufa, elytris maculâ ovatâ suturali pone medium nigrâ.

Long. $3\frac{1}{2}$ lin.

Nagasaki ; Hiogo. Many examples.

Apparently allied to *C. fasciata* (Chaud.) from the Moluccas. Pale testaceous-red, shining ; antennæ concolorous. The thorax is similar to that of *C. latecincta*, *i. e.* not distinctly transverse ; it is about as broad as the head, with moderately narrow explanated margins, very slightly angulated just before the middle, thence sinuated to the nearly rectangular and slightly produced hind angles ; the surface has a few scattered punctures. The elytra are about twice the width of the thorax, oblong-ovate, strongly punctulate-striate, the 3rd and 4th striæ sunk in longitudinal depressions ; the interstices finely and sparsely punctulated, the 3rd with five large punctures. The ovate black spot is sometimes prolonged in a point along the suture towards the base.

C. cavipennis, n. sp.

Latior, melleo-flava nitida, antennarum articulis 5—11 nigris ; thorace mox ab margine antico dilatato-rotundato, late explanato ; elytris fortiter punctulato-striatis, disco utrinque foveâ magnâ, ibique interstitio 3^tio^ punctigero.

Long. $4\frac{1}{2}$—5 lin.

Hiogo.

Testaceous tawny-yellow in well-preserved examples. The head is rather coarsely, but sparsely, punctured, and bears a V-shaped depression in the middle of the forehead. The thorax is strongly transverse ; dilated and broadly rounded immediately from the anterior angles, and narrowed again behind, with little sinuation, to the obtuse but distinct hind angles ; the lateral margins are broadly explanated, and the fore and hind borders rather thickly punctured. The elytra are oblong-ovate, obtusely and broadly truncated behind ; the striæ are well impressed and punctulate, and the interstices somewhat plentifully sprinkled with punctures ; the 3rd, 5th and 7th interstices are much con-

tracted in the middle, owing to a depression in the side, and a much longer one on the disk ; a large puncture on the 3rd interstice is a conspicuous object in the discoidal depression, and there is a second one nearer the apex.

Apparently allied to *C. testacea* (Chaud.), from Dacca in Bengal.

C. læsipennis, n. sp.

Præcedenti major, elytrorum striis vix vel haud impressis. Melleo-flava vel testacea-rufa, nitida ; antennarum articulis 5—11 nigris ; thorace antice valde dilatato-rotundato ; elytris subtiliter striato-punctulatis, disco utrinque impressione profundâ transversâ flexuosâ.

Long. $5\frac{1}{2}$—6 lin.

Nagasaki.

Head same as in *C. cavipennis*. Thorax very similar ; strongly transverse, dilatate-rotundate anteriorly. Hind angles rather more obtuse, and base truncated on each side more obliquely. Elytra of greater amplitude ; striæ not impressed, consisting of rows of extremely fine punctures ; interstices finely and sparsely punctulate ; the discoidal depression has quite a different form from that of *C. cavipennis ;* instead of being a broad pit, it consists of a tortuous, irregular transverse furrow. The two large punctures of the 3rd interstice are in the same position as in *C. cavipennis*.

Calleida lepida, Redtenbacher, Reise d. Novara, Coleop. p. 6.

Nagasaki ; Hiogo ; Tango ; Yokohama. Also Hong Kong.

C. onoha, n. sp.

C. piceo-rufa, pedibus, thoracis margine, antennarumque basi dilutioribus, capite castaneo-rufo ; elytris læte viridi-æneis, apice auratis, fortiter punctulato-striatis.

Long. 4 lin.

Hiogo.

The head is of a glossy chestnut-red, and obliquely narrowed behind the eyes as in *C. lepida*. The thorax is broader than the head, and rather strongly cordate ; the sides are almost semicircularly rounded from the neck, and sinuate-angustate after the middle to the obtuse, and not at all produced, hind angle ; the base is arcuated ; the lateral margins not very widely explanated, and the surface strigose ; except the pale margins it is of a glossy pitchy, or dark castaneous colour. The elytra are elongate, as in

C. lepida, and striated almost as deeply; the colour is brilliant metallic-green, golden towards the apex, and rather piceous along the suture; the interstices have a few distinct punctures.

Subfam. Galerucidiinæ.

Lebidia octoguttata, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 323; id. Beitr. p. 20, t. 1, f. 11.

Nagasaki; Hiogo; Yokohama. Abundant, on wooded hills, by beating underwood.

L. bioculata, Morawitz, Beitr. p. 29, t. 1, f. 12.

On Maiyasan, near Hiogo; three examples.

All three specimens differ from the one Morawitz described in having a black spot in the centre of the large round yellow spot on each elytron, rendering still more appropriate the specific name. As they agree in all other respects, I do not venture to consider the difference as more than an accidental one.

Subfam. Lebiinæ.

Dictya cribricollis, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 245; Chaudoir, Monogr. des Lebiides, p. 14.

Common throughout Japan; beaten from bushes. Also in Eastern Siberia, on the Amur.

Lebia Japonica, Chaudoir, Monogr. des Lebiides, p. 115.

Nagasaki; Hiogo. Abundant, in damp woods, on trees.

L. fusca, Morawitz, Beitr. p. 26.

Hakodadi.

Mr. Lewis did not meet with this species. It is allied to *Japonica*, 3½ lines long, and entirely dark brown above, except the sides of the thorax and the epipleura of the elytra.

L. Idæ, n. sp.

L. Japonicæ proxime affinis at differt colore. Rufo-testacea, capite postice, thoracis disco, elytrisque nigro-piceis, his marginibus extremis maculâque humerali virguliformi flavo-testaceis.

Long. 3½ lin.

Hiogo; Satsuma; Nagasaki.

It is a larger insect than *L. Japonica*. The head is

broader, and strigose and punctulate. The thorax is much broader, strongly transverse and broadly rotundate-dilated from the anterior angles; it is scarcely narrowed, and slightly sinuated, towards the basal angles, which are a little prominent; the surface is thickly and irregularly rugulose. The elytra are broad, distinctly dilated behind, and very deeply striated with convex interstices; in colour they are very dark castaneous, nearly black, with the extreme margins and an inverted comma-like spot, not touching the base, and spread over the 5th to 7th interstices in its basal part, and over the 3rd to 7th at its termination on the anterior disk of the elytron.

L. sandaligera, n. sp.

L. Japonicæ formâ simillima. Castaneo-rufa, scapo, femoribus, tibiis nigris, elytris nigro-castaneis, convexis fortiter striatis.

Long. $2\frac{3}{4}$ lin.

Yokohama; one example.

Very similar in size and form to *L. Japonica*. The head is smooth and impressed in the middle of the forehead. The thorax is very similar in outline and proportions; moderately dilatate-rotundate from the anterior angles; but it is more rectilinearly narrowed behind, and the hind angles do not project in the slightest degree; the explanated lateral margins are rather narrow, and the disk is very minutely and faintly coriaceous. The coloration is very peculiar, especially the black femora and tibiæ, with tawny-reddish coloured tarsi.

L. bifenestrata, Morawitz, Bull. Ac. St. Petersb. v. 1863, p. 245.

Var. *lucescens*, elytris fascia apicali flava.

Yokohama; Nagasaki; Hiogo; Usuri and Bureja, R. Amur.

Also closely allied to *L. Japonica*, but only half the size, and with a shorter and broader thorax. The elytra are dark brown, with a large pale discoidal spot. Only one of Mr. Lewis's specimens agrees in colour with Morawitz's description; the rest have a broadish pale apical fascia, and the discoidal spot prolonged anteriorly towards the middle of the base.

L. comitata, n. sp.

L. Japonicæ affinis, flavo-testacea; elytris profunde stri-

atis, vittâ suturali (apice abbreviatâ) apud medium constrictâ, maculâque utrinque postico-discoidali, nigris.

Long. $2\frac{1}{2}$ lin.

Nagasaki; Yokohama.

Elytra spotted similarly to *L. cyathigera*, but the species belongs to the same group as *L. Japonica*, having deeply striated or sulcated elytra, and strongly bilobed 4th tarsal joints. The head and thorax are somewhat redder than the rest of the body and limbs, and are very finely alutaceous and sub-opake. The thorax is rather short and strongly transverse, with broad explanated margins, broadly rounded from the anterior angles and scarcely narrowed behind to the rather obtuse, but somewhat prominent, hind angles. The dark markings of the elytra consist properly of an elongate-ovate spot over the suture, about the middle, which is connected anteriorly with an ill-defined triangular one over the scutellum more piceous or reddish in colour, and of a rounded discoidal spot on each elytron behind the middle.

L. crux-minor, L. et auctor.

Nagasaki; Hiogo; many examples.

No difference is perceptible between Japanese examples and those of Europe, except in the colour of the legs; the hind trochanters, the apex of all the femora, the tibiæ and the tarsi being black. It approaches nearest, therefore, the S. European var. *nigripes*. I have specimens from East Siberia, some coloured as in the type, and others in which the apex of the femora and the tarsi are black.

Subfam. Pentagonicinæ.*

Pentagonica ruficollis, Schmidt-Goebel, Faun. Col. Birm. p. 48.

Nagasaki; on foliage.

Two examples, agreeing exactly with the description, except their larger size, $2\frac{3}{4}$ lin., Schmidt-Goebel giving $2\frac{1}{4}$ lin., but he had only a single specimen to judge from.

P. nigripennis, n. sp.

Nigra; elytris nitidis fortiter punctato-striatis, margine deflexo fusco; thorace testaceo-rufo, nitido; antennis piceis; pedibus flavo-testaceis, fusco-nebulosis.

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* *Scopodes* (Erichs.) probably belongs to this subfamily.

Long. $2\frac{1}{6}$ lin.

Nagasaki ; three examples.

Similar in form to *P. ruficollis*, but elytra more convex. The head is subopake ; labrum and palpi piceous; antennæ pitchy-black, with the extreme bases of the joints pallid testaceous. The thorax forms a broader or more truncated peduncle at the base than in *P. ruficollis*. The elytra are of a deep shining black, the deflexed margins (epipleura) only tawny-brown, except in some examples this colour extends to the upper edges ; the striæ are finely impressed, much more deeply so towards the apex, and are strongly punctured; the 3rd interstice does not show the two punctures which are so conspicuous (especially the one near the base) in *P. ruficollis*.

P. subcordicollis, n. sp.

Nigro-picea, antennis (scapo fusco-piceo excepto), palpis et pedibus flavo-testaceis ; thorace minus transverso, subcordato sed angulis lateralibus distinctis, pedunculo latiori, truncato ; elytris subtilissime punctatis, margine exteriori à scutello usque ad suturæ apicem anguste flavo-testaceo, suprà fortiter punctato-striatis, striis apice minus impressis.

Long. $2\frac{1}{8}$ lin.

Nagasaki ; one example.

The thorax is less transverse, or narrower in proportion to the length, than in other Asiatic species ; it is, however, of the same pentagonal form, except that the base forms a somewhat broader peduncle, obtusely truncated; its surface is convex and very glossy, pitchy-black, a little clearer on its margins. The head also is rather narrower and the eyes less prominent ; and the antennæ have conspicuously thicker joints. The elytra have very strongly punctured striæ, but they become much fainter towards the apex.

To the four names (*Rhombodera, Pentagonica, Didetus, Elliotia*) which this well-marked genus had received, Mr. Wollaston has recently added a fifth, *Xenothorax*, in his "Coleoptera Hesperidum," founded on a species, *X. hexagonus*, from the Cape Verde Islands. This species is distinct from all others (9 in number) which I have been able to examine, but it offers not the slightest ground for generic separation. The basal peduncle of the thorax is much broader and more truncated than in *P. ruficollis*, but every species differs a little in the form of this part. The name *Rhombodera* (Reiche, 1842), is prior to *Pentagonica* (Schmidt-Goebel, 1846), but it was pre-occupied by Burmeister for a genus of *Orthoptera* in 1839.

Subfam. Coptoderinæ.

Amphimenes, nov. gen.

Gen. *Stenognatho* formâ similis. Caput ovatum; oculis vix prominulis. Labrum elongatum antice angustatum, apice leviter angustatum. Mentum medio dentatum, lobis triangularibus, acutis. Ligula porrecta, angusta, antice bisetosa; paraglossis eam vix superantibus, adnatis. Palpi graciles, truncati. Thorax quadratus, postice modice angustatus. Elytra oblonga, oblique sinuato-truncata, profunde striata. Pedes elongati; tarsi gracillimi, angusti, articulis 1, 2 et 5 valde elongati, subæquales; unguiculi graciles, multidentati.

In facies, and in the narrow shape of the head and subflattened eyes, this genus resembles *Stenognathus*, and other genera of *Thyreopterinæ* (Chaud.), but the bisetose ligula removes it to the *Coptoderinæ*, according to Baron Chaudoir's definition; and I cannot but think that it proves the distinction drawn by this eminent Entomologist between the two groups to be highly artificial. The eyes are not so small and flat as in *Miscelus*, neither are they furnished with a thick orbit behind, the head narrowing very obliquely from the eye to the neck.

Amphimenes piceolus, n. sp.

Vix convexus, saturate fusco-piceus, partibus oris, antennis, thoracis et elytrorum marginibus angustis, pedibusque testaceo-fulvis; capite thoraceque alutaceis sericeis, hoc quadrato, antice utrinque modice rotundato postice parum angustato, angulis posticis obtusis, subrotundatis, margine laterali explanato et reflexo, pallido; elytris profunde striatis, interstitiis convexis subtilissime rugulosis sed nitidis, 3^io^ bipunctato.

Long. $2\frac{1}{4}$ lin. ♂ ♀.

Nagasaki; under bark.

The colour is dark pitchy-brown, rather glossy on the elytra, but sericeous subopake on the head and thorax; the explanated margins of the thorax and the elytra, like the antennæ, legs and parts of the mouth, are pale tawny-yellowish. The elytra differ somewhat in outline from those of *Stenognathus*, *Sinurus*, &c. in being narrower, especially at the base, where they are not much broader than the widest part of the thorax; the shoulders are obliquely rounded. The interstice between the 8th and 9th striæ, anteriorly, is broken up by large irregular punctures.

XI. *Descriptions of new genera and species of Geodephagous* Coleoptera, *from China.* By H. W. Bates, F.L.S.

[Read 17th March, 1873.]

The following descriptions, founded in great part on the collections made by Mr. George Lewis in China, are intended as a contribution to our knowledge of the Geodephagous Fauna of that country, and as facilitating the comparison between the faunas of China and Japan in this department. It will have been observed that all species common to the two countries have been indicated in the foregoing memoir on the *Geodephaga* of Japan.

Cicindela Kaleea, Bates, Proc. Zool. Soc. 1866, p. 340.

This species, described originally from the Island of Formosa, is found also in China. I have specimens from Shanghai, and Mr. Lewis has found it at Foochow. It varies considerably in size, in the relative length of the elytra, in colour and markings. Sometimes it is tinged above with a silky, tender green colour. The central oblique white band is dissolved in some examples into two spots, one discal and the other marginal, but there is almost always a trace of a slender line uniting the two. The species by its cylindrical thorax and slender figure belongs to the same group as *C. germanica*, *gracilis*, &c.

Pristomachærus, nov. gen.

Maxillæ maxime elongatæ, rectæ, angustæ, apice hamatæ, basi intus setosæ, apicem versus spinis corneis armatæ; lobis exterioribus æque elongatæ, apice curvatæ. Mentum sinu fundo quadrato, edentato; lobis triangularibus, extus rectilinearibus. Ligula porrecta, apice dilatata, truncata; paraglossis ea longioribus, latis. Mandibulæ rectæ, apice acutissimæ. Palpi graciles, articulis ultimis acuminatis. Labrum breve, medio late emarginatum. Antennæ lineares; articulis 1—3 parsim, reliquis dense pubescentibus. Thorax suborbicularis, convexus, basi utrinque profundissime emarginatus, margine extus dente valido formanti. Elytra ut in *Chlæniis* brevioribus, apice haud sinuatis. Episterna

metasterni brevia, epimera transversa, recta, brevissima. Pedes *Chlæniorum*. Tarsi antici ♂ articulis tribus oblongis, angulis rotundatis.

The extraordinary little insect on which this genus is founded is unlike any other described species; although having the facies, colours and punctuation of the *Chlænii*. The maxillæ are very remarkable; projecting as very slender, straight shafts far beyond the tip of the long, straight, acute mandibles, and having a slender short hook at the end; the inner side towards the apex armed with a few horny teeth, and the basal part setose as in other *Carabidæ*. I am not sure that the palpiform exterior lobes of the maxillæ are jointed; they appear simple as in *Callistus*, and are a little longer than the blade of the maxilla, the tip of which they cover as a hood.

Pristomachærus Messii, n. sp.

Breviter oblongo-ovatus, convexus, breviter nigro-pubescens, nigro-æneus, subopacus, capite viridi-æneo, nitido; partibus oris, antennarum articulis 3 basalibus, pedibus, maculis utrinque duabus elytrorum (unâ marginali juxta humerum, alterâ discoidali dentatâ ante apicem) fulvo-testaceis; fronte thoraceque grosse discrete punctatis, hoc lateribus æqualiter rotundatis, postice dente magno acuto retrorsum spectanti formantibus; elytris acute punctulato-striatis, interstitiis subplanis crebre discrete punctulatis; sternis omnino punctatis.

Long. $3\frac{1}{2}$ lin. ♂.

Hong Kong; two examples, kindly given me by Herr Mess, of Munich.

The head is shining brassy-green, the thorax darker green, cupreous on the disk, the margins extremely fine. The eyes are very salient. The thorax is rounded off to the anterior angles, which are close to the sides of the neck; behind it is less narrowed to the remarkable tooth-like lobe which forms the hind angle, and within which the base is very deeply notched. The fulvous spot near the shoulder occupies the deflexed margin and three marginal interstices; the posterior spot lies on interstices 4—8, very short on 4, 5.

Chlænius (*Vertagus*) *spathulifer*, n. sp.

Elongatus, gracilis, niger, subopaca, capite cupreo-nitido, thorace marginibus anguste viridi-æneis; antennarum articulis 2 basalibus, femoribus (apice nigro excepto), tibiis

intermediis et posticis medio, elytrorumque maculâ utrinque transversâ dentatâ ante apicem, fulvo-testaceis; palpis nigris, articulis ultimis maxime dilatatis, suprà excavatis; capite fere lævi; thorace elongato-ovato, angusto, lateribus reflexis, angulis valde obtusis, suprà discrete punctato; elytris profunde punctulato-striatis, interstitiis punctulatis.

Long. 5 lin. ♂.

China.

In slenderness of form intermediate between *Chl.* (*Vertagus*) *Buquetii* and *Chl. lynx;* the thorax being elongate-ovate, with obtuse angles, and sides very regularly arcuated, the widest part being exactly in the middle. The palpi have the terminal joints of very extraordinary form (in the ♂); they are not triangular as in the allied species, but broadly rhomboïdal, with the greater part of one surface (the upper?) excavated. The tooth of the mentum is broad and simple. The fulvous spot of the elytra is similar to that of *Chl. lynx* and allied species, occupying interstices 4—8, and much broader on the fifth.

Chl. cyaniceps, n. sp.

C. deliciolo proxime affinis, at differt thorace vittâ latâ medianâ nigrâ. Niger, opacus, capite cæruleo, creberrime subtiliter punctulato; partibus oris, antennarum basi, pedibusque flavo-testaceis; thoracis lateribus, elytrorumque vittâ marginali utrinque abbreviatâ, maculâque parvâ bihamatâ suturali, ante apicem, fulvis.

Long. $5\frac{1}{4}$ lin. ♂.

Hong Kong.

Very near *Chl. deliciolus*. The thorax is larger, with sides very regularly arcuated from base to apex, the broadest part in the middle, the hind angles rounded off, the surface minutely punctate-rugulose, the middle part occupied by a broad uneven black vitta, the sides broadly fulvous. The lateral pale vitta of the elytra occupies only the middle of the sides, the posterior sutural spot is small and hooked on each side.

Chl. prostenus, n. sp.

Chl. inops affinis; magis elongatus et parallelus. Viridi-æneus, capite thoraceque nitidis, subcupreo-tinctis; palpis, antennis, pedibus, margineque laterali thoracis et elytrorum flavo-testaceis; mandibulis, labro, corporeque

subtus rufo-piceis; thorace quadrato lateribus parum rotundato, antice magis quam postice angustato, toto alutaceo et strigoso, disperse punctato.

Long. $5\frac{1}{2}$ lin. ♂ ♀.

Kiu-Kiang, on the Yang-tsze-Kiang.

Similar to *Chl. inops*, but at once distinguished by its longer thorax, which is pretty regularly and not strongly rounded from the base to the apex, the hind angles being obtuse, the widest part at the middle, and the anterior part much narrower than the base; the yellow margin is narrow and uniform; the surface differs from that of *Chl. inops* and *vestitus*, in being finely roughened throughout, and covered besides with short, transverse strigæ, the ordinary punctuation being similar in all three species. The head is finely punctured, and more or less strigose over its whole surface. The elytra are more elongate and parallel-sided, less oval, than in the two species cited; densely pubescent, finely but sharply punctulate-striated, the interstices plane and minutely punctulate; the pale border occupies two interstices near the base, is narrowed in the middle, and widened again towards the apex; it does not, however, form a broad apical patch, and is there strongly denticulated. The underside is reddish-piceous, paler on sides of abdomen, punctulate and pubescent throughout.

Chl. postscriptus, n. sp.

C. sinensi (Chaud.) affinis. Caput et thorax viridi-æneа, cupreo-tincta; illo pone oculos transversim grosse punctato, hoc anguste quadrato, ante medium paulo rotundato-dilatato, suprà grossissime sed sparsim punctato, foveis basalibus elongatis, profundis; elytris basi quàm thorace plusquam duplo latioribus, sparsim erecte pubescentibus, obscure cupreis, lateribus viridibus, margine apicali anguste flavo, striis acutis vix punctulatis, interstitiis convexis lævibus; corpore subtus nigro-piceo, nitido; palpis, antennis (articulo tertio nigro) pedibusque flavo-testaceis.

Long. 7 lin. ♀.

Hong Kong.

Distinguished from *Chl. sinensis* by the narrow pale apical margin of elytra, instead of an apical spot, and also by the convex interstices.

Dichirotrichus amplipennis, n. sp.

Oblongus, elytris latis, elongatis; suprà omnino punctulatus, erecte-pubescens; suprà fulvo-testaceus, capite et

thorace piceo-fusco variegatis; elytris interdum postice utrinque cyaneo-nigro-vittatis; antennis et pedibus fulvo-testaceis; thorace parvo, transverso, quadrato-cordato, angulis posticis obtusissimis sed distinctis; elytris magnis, oblongis, parallelis, planatis, acute subtiliter striatis, striolâ basali nullâ, striâ 7ta obsoletâ, 8va a margine valde remotâ.

Long. $2\frac{1}{2}$ lin. ♂ ♀.

Shanghai; given me by M. De Rivas.

Distinguished from all the other species by the great relative magnitude of the elytra, which gives the insect a facies unlike that of a Harpalide. The punctuation is very fine and scattered; the pubescence covers the whole body, legs, antennæ and palpi; the last-mentioned have the terminal joint fusiform, and very attenuated towards the apex; the base of this joint in the maxillaries is black, the rest of the palpi being yellowish-tawny.

Stenolophus connotatus, n. sp.

St. discophoro similis. Elongatus, parallelus, testaceo-ferrugineus, capite, thoracis medio, vittâque abbreviatâ communi elytrorum (basi attingenti) nigris; thorace transverso, postice angustato, basi utrinque punctato; elytris fortiter striatis.

Long. 3—$3\frac{1}{2}$ lin. ♂ ♀.

Kiu-Kiang.

More elongate and parallel-sided than *St. discophorus;* body beneath always rusty-red; the middle of the thorax black, and the elytral vitta reaching the base, where it occupies two interstices, spreading over five in the middle. The head is distinctly larger and broader.

Amblystomus (*Megaristerus*) *guttatus*, n. sp.

Elongatus, angustus, convexiusculus, nigro-piceus, sericeo-nitens; antennarum scapo, palpis, pedibus, elytrisque guttis utrinque 2 rotundatis, parvis, flavo-testaceis; capite magno, lato; thorace transverso, brevi, subluniformi, angulis posticis vix conspicuis; elytris thorace paulo latioribus, elongatis, postice paulo dilatatis, apice obtusis; striis dorso fortiter, lateribus minus, impressis, maculâ primâ versus humeros interstitiis 5—6, 2nda versus apicem 3—4 occupantibus.

Long. $1\frac{3}{4}$ lin.

Foochow.

The elytra have a slight blueish-brassy gloss. Differs from *Megaristerus stenolophoïdes*, Nietn., in the con-

colorous suture and apex of the elytra. The anterior angles of the thorax are distant from the sides of the neck, and the sides are gradually and not very much narrowed and rounded to the base. The third elytral interstice has one puncture, much after the middle, and near the second stria.

Bradycellus sinicus, n. sp.

Robustus, postice paulo dilatatus, nitidus, capite et elytris nigris; antennarum basi, thorace et pedibus obscure ferrugineis, palpis et abdomine flavo-testaceis, pectore piceo; capite lato, antice obtuso; thorace transverso, post medium modice angustato, angulis posticis rotundatis, foveâ basali utrinque unicâ, magnâ, rotundatâ, sparsim grosse punctatâ; elytris fortiter striatis, striolâ basali modice elongatâ.

Long. $2\frac{1}{2}$ lin. ♂ ♀.

Kiu-Kiang.

Similar in form to *Br. harpalinus* (Dej.), except that the head is much broader and more obtuse (like *Tachycellus grandiceps*), and the thorax much broader in proportion to the length, and more narrowed from the middle to the base. The terminal joint of the palpi is thicker, but the apex is attenuated to a point. The first ventral segment in the ♂ has no fovea. The thorax is always very dark blood-red; the legs rather lighter and more piceous.

Trigonotoma chalceola, n. sp.

Oblonga, convexa, nigro-polita, elytris æneis, palpis testaceo-rufis; labro angusto, medio fortiter rotundato-emarginato; thorace transverso, rotundato, postice magis angustato, angulis posticis rotundatis, basi toto et sulco intra marginem lateralem grosse punctatis; elytris breviter oblongis, striis fortiter impressis et punctatis; episternis et abdominis lateribus pauciter grosse punctatis; segmentis ventralibus transversim unisulcatis.

Long. $5\frac{1}{4}$ lin. ♂ ♀.

Hong Kong. (From Herr Mess).

The smallest described species of the genus; distinguished further by its colour—glossy black, with dark æneous elytra. The labial palpi are securiform, broader in the ♂; the maxillary palpi have in both sexes the inner side of the terminal joint dilated and rounded, and the apex truncated.

ONYCHOLABIS, nov. gen.

Facies *Anchomeni*. Caput breve, antice et postice subito angustatum. Mandibulæ valde elongatæ, acutæ, curvatæ. Maxillæ elongatissimæ, curvatæ, versus apicem intus nudæ, prope medium unispinosæ. Palpi elongati, graciles, articulo ultimo præcedenti æquali, leviter fusiformi, truncato. Mentum dente mediano emarginato. Antennæ elongatæ, graciles, articulo tertio quàm quarto multo longiori, et longe pubescenti. Thorax cordatus, basi fortiter constrictus. Pedes graciles, tarsorum quatuor anticorum articulum 4^{tum} valde emarginatum, fere bilobatum; ungues simplices. Corpus glabrum.

Closely related to *Cardiomera*,—the antennæ, as in that genus, being clothed with woolly pubescence from the third to eleventh joints. The tarsi are also very similar; but the form of the head and thorax is totally different, and the singular claw-like and elongated shape of the mandibles and maxillæ is quite peculiar. I only know the ♀.

Onycholabis sinensis, n. sp.

Nigro-piceus, nitidus, partibus oris, antennis et pedibus flavo-testaceis; capite et thorace angustis sublævibus, hoc fere cyathiformi, postice fortiter angustato, lateribus ante basin rectis, angulis posticis acutis, disco transversim strigoso, marginibus punctato-rugosis; elytris amplis, versus apicem gradatim angustatis, punctato-striatis, striis versus apicem fortissime impressis.

Long. 4½ lin. ♀.

Banks of Yang-tsze-Kiang, in Sze-Chuen (Mr. Consul Swinhoe).

Anchomenus (*Agonum*) *irideus*, n. sp.

Elongato-ovatus, nigro-piceus, sericeo-micans, elytris iridescentibus; palpis, pedibus antennisque testaceo-rufis, his articulis 2—4 nigro-plagiatis; capite ovato, oculis modice prominulis; thorace quadrato-ovato, lateribus regulariter arcuatis, angulis posticis rotundatis, suprà lævi, marginibus rufescentibus; elytris oblongo-ovatis, amplis, fortiter striatis, interstitio 3^{io} tripunctato, margine deflexo fulvo-piceo; tarsis omnibus utrinque sulcatis.

Long. 4½ lin. ♀.

Hong Kong. Apparently allied to *A. Chinensis* (Bohem.).

A. (*Agonum*) *æneotinctus*, n. sp.

A. scintillanti (Boh.) simillimus, at minor, elytris punctato-striatis, etc. Suprà fuscus, æneo-nitens, elytris iridescentibus; subtus, palpis, pedibus, thoracis et elytrorum marginibus angustis, antennisque flavo-testaceis; thorace ut in *A. scintillanti* quadrato-ovato, sed postice minus angustato; elytris fortiter striatis, striis punctatis; interstitio 3^io^ quadripunctato.

Long. $3\frac{1}{4}$—$3\frac{1}{2}$.

Foo-chow.

Pristodactyla Cathaica, n. sp.

Elongata, piceo-nigra, nitida, subtus rufo-picea; antennis, palpis, pedibusque testaceo-rufis; capite brevi, mox pone oculos oblique angustato; thorace oblongo-ovato, antice et postice æque angustato sed ante medium latiori, angulis posticis rectis, prominulis, foveis basalibus magnis, profundis; elytris elongato-subparallelis, striis simplicibus, omnibus æqualiter fortiter impressis, 5—6 longe ante apicem conjunctis, interstitio tertio bipunctato; palpis apice cylindricis, truncatis; prosterno antice haud marginato; tarsis 4 posticis bisulcatis.

Long. 6 lin. ♂ ♀.

Foo-chow.

The head is more rapidly narrowed behind the eyes than in any other species known to me. The thorax also differs in having rectangular hind angles, with their apices slightly prominent. In other respects the thorax resembles that of *Pr. impunctata*, *dulcigrada*, &c., but it is not narrower at the base than at the apex, and the broadest part is a little before the middle.

Colpodes Olivius, n. sp.

C. amœno et *anachoretæ* affinis; suprà olivaceo-æneus, nitidus; oculis exstantibus, thorace breviter quadrato, transverso, antice modice, postice magis angustato, angulis posticis obtusis, vix prominulis, reflexis, margine laterali anguste explanato et reflexo, rufescenti; elytris amplis, elongato-oblongo-ovatis, postice utrinque fortissime sinuatis, versus suturam productis truncatis, angulo suturali spinoso; suprà disco antice late depresso, subtiliter sed acute striatis, interstitio 3^io^ tripunctato; corpore subtus olivaceo-nigro; antennis, partibus oris, et pedibus piceo-rufis. Tarsi omnes suprà fortiter sulcati; articulo 4to acute emarginato.

Long. $5\frac{1}{2}$ lin. ♂.

Hong Kong.

Tachys gradatus, n. sp.

T. Lucasii affinis. Ovatus, nigro-æneus, elytris utrinque maculis duabus fulvis, antennarum basi, partibus oris, pedibusque flavo-testaceis; thorace transversim quadrato-subcordato; elytris utrinque striis tribus a suturâ gradatim brevioribus, 3ia bipunctatâ; striâ 8va fortissime impressâ et flexuosâ.

Long. $1\frac{1}{4}$ lin.

Foo-chow.

The tawny-yellow spots of the elytra are very indistinctly limited, though in the same position as in *T. læti-ficus*, etc. The three sharply impressed, simple, elytral striæ are successively shorter from the sutural one, being abbreviated both towards base and apex; the first puncture is exactly at the commencement of the third stria, the second lies a little beyond its termination.

T. pœcilopterus, n. sp.

T. scydmænoïdi (Neitn.) proxime affinis, at paulo major, thorace postice magis angustato, elytris fusco-nigro maculatis; rufo-testaceus, convexus, politus; antennis palpisque fuscis, basi et pedibus pallido-testaceis, elytris utrinque maculis duabus transversis fulvo-testaceis, apice et medio nigro-plagiatis; striis tantum duabus, exteriori abbreviatâ.

Long. $1\frac{1}{8}$ lin.

Foochow.

The elytra have only two striæ, as in *T. scydmænoïdes;* the eighth is very strongly impressed and entire. The colour of the elytra is glossy chestnut-red, but becoming black in the middle of the spaces between the pale spots; these spots are more transverse than in the numerous allied species, the posterior one being almost a fascia interrupted at the suture. The thorax is rather longer than in *T. scydmænoïdes;* although transverse, and broadly rounded anteriorly, it is rather strongly narrowed towards the base. The frontal grooves are very wide apart, forming very short striæ.

T. vixstriatus, n. sp.

T. fulvicolli proxime affinis; oblongus, vix convexus, fulvo-testaceus; capitis vertice, elytrisque medio transversim leviter infuscatis; thorace transversim quadrato, antice

modice rotundato, postice perparum sinuatim angustato, angulis posticis fere rectis; elytris striis 2 parum impressis, reliquis obsoletis, 8va prope apicem solum impressâ.

Long. $1\frac{1}{3}$ lin.

Kiu-Kiang, on the Yang-tsze.

Extremely near the European *T. fulvicollis*. The head and thorax are precisely similar to those of that species; but the elytra have no trace of striæ beyond the third or fourth, and those are so faint as to be only visible in certain lights; the sutural and second striæ too are very faintly impressed. The brown belt across the middle of the elytra is sometimes dark and better defined, extending a little along the suture; in such specimens the head, thorax and extreme apex of the elytra are also dark.

Bembidium (*Peryphus*) *chloreum*, n. sp.

Oblongum, olivaceo-æneum, nitidum, antennarum basi, pedibusque piceo-rufis; thorace latiusculo minime cordato, post medium sinuatim paululum angustato, angulis posticis acutis, basi toto grosse haud profunde rugato, foveis latis extus carinula juxta angulum marginatis; elytris punctato-striatis, striis haud profunde impressis, exterioribus versus apicem evanescentibus, interstitio 3io bipunctato.

Long. $2\frac{1}{2}$—$2\frac{3}{4}$ lin. ♂ ♀.

Kiu-Kiang, on the Yang-tsze.

Broader and shorter than *B. lunatum;* thorax much less narrowed towards the base; elytral interstices flatter. The colour is olivaceous-brassy or coppery, the elytra becoming indistinctly pallid (although still metallic) towards the apex. The antennæ are black, with the scape and base of the second and third joints dark red. The palpi are black, with the bases red.

Bemb. (*Peryphus*) *collutum*, n. sp.

Ellipticum, viridi-æneum, politum, elytris utrinque versus apicem vittulâ obliquâ testacco-rufâ; antennis, partibus oris, et pedibus flavo-testaceis; thorace magno, quadrato, elytris basi vix angustiori, paulo ante medium vix dilatato subangulato, deinde ad basin paululum angustato, angulis posticis rectis, suprà basi toto rugosulo, carinulâ juxta angulum elevatâ; elytris humeris obliquis, deinde parallelis,

longe ante apicem gradatim attenuatis, striato-punctatis, striis versus apicem evanescentibus.

Long. $2\frac{1}{3}$ lin. ♂ ♀.

Kiu-Kiang and Foochow.

Differs from all other species known to me by its elliptical form. The thorax is large and nearly square, rather more narrowed anteriorly than behind, with the broadest part a little before the middle, where the dilatation is very slight and subangular. The elytra are of same width as the thorax at the base, and are very obliquely or gradually enlarged from that point. The pale stripe near the apex is sometimes almost blended behind with the pale apex itself.

Drypta Formosana, n. sp.

Magna, lata, robusta, nigro-picea, antennis, palpis, pedibusque testacco-rufis; capite pone oculos tumido, suprà grosse confluenter punctato, epistomate plagâ mediană frontali colloque lævibus; thoracis parte anticâ dilatatâ, margine laterali acuto, denticulato, antice vix angustato, ante basin fortiter angustato, suprà grosse confluenter rugoso-punctato, medio longitudinaliter elevato, lateribus utrinque depressis; elytris amplis, striis latis, transversim grosse punctatis, interstitiis latis, medio lævibus.

Long. $6\frac{1}{2}$ lin.

I. Formosa (Mr. Swinhoe).

One of the largest known species of *Drypta*, allied to *D. mandibularis* (Java) and *crassiuscula* (India).

Singilis hirsutus, n. sp.

Ferrugineo-piceus, labro, palpis, femoribusque pallidioribus, densissime hirsutus; capite collo constricto; thorace transversim quadrato, medio fortiter rotundato, postice utrinque modice sed valde sinuatim angustato, marginibus lateralibus late explanatis reflexis, angulis posticis productis rectis, basi medio late sed haud longe lobato, utrinque usque ad angulum recte truncato; elytris convexiusculis ut in *S. bicolore* punctato-striatis, interstitiis subconvexis.

Long. $3\frac{3}{4}$ lin.

Hong Kong.

The pubescence is so dense and woolly that the sculpture of the integuments is not readily visible; the middle of the head and thorax are, however, smooth. The

insect agrees with *Singilis* in palpi, tarsi, &c., but differs in the narrower neck, more explanated margins of the thorax, and rather more convex elytra. The tarsi are hairy above; the fourth joint strongly bilobed; the claws pectinated. The metathoracic epimera are extremely short and inconspicuous, as in *Singilis*, *Endynomena*, and allied genera; the labial palpi have the terminal joint very much thickened, but not securiform, and obtusely truncated. The interstices of the elytra are impunctate, as in *S. bicolor*, but I do not perceive the two setiform punctures on the third.

XII. *Characters of seven nondescript Lucanoid* Coleoptera, *and remarks upon the genera* Lissotes, Nigidius *and* Figulus. By Major F. J. Sidney Parry, F.L.S.

[Read 7th April, 1873.]

Lucanus Dybowski, ♂, Parry, (var. max.).

L. nigro-brunneus, mandibulis robustis, capite prothoraceque paulo longioribus, intus irregulariter quinquedentatis, corpore subtus dense villoso, femoribus infrà rubro-maculatis.

Closely allied to *L. Hopei* (vide Trans. Ent. Soc. 3rd Ser. vol. ii. p. 9, pl. vi. fig. 2), but the following differences upon comparison are found to be apparent. The mandibles are somewhat longer, less circumflex, and furnished with seven teeth instead of five, these being less regularly distributed: the basal tooth inclining internally, instead of externally as in *L. Hopei;* the posterior angles of the head are considerably more rounded; the suberect lobe, so conspicuous in the centre of the anterior margin of the head in *L. Hopei*, is also entirely wanting; moreover, the sides of the thorax are much less sinuate, with the anterior angles less produced. I have but little doubt that both these species in a normal condition are strongly pubescent upon the upper surface. I am indebted to Count Mniszech for the opportunity of notifying this interesting species. It has been named after a young and zealous Polish entomologist by whom it was captured, with other interesting novelties, in the district of the Amur River, Dauria, and transmitted to the Museum of Natural History in Warsaw. A specimen of *L. Dybowski* is to be met with among the insects recently sent to the Paris museum by Mons. l'Abbé David, from the province of Mou-Pin, Eastern Thibet.

Long. corp. unc. $1\frac{3}{4}$; mandib. lin. 10.

Coll. Mus. Varsoviensis, Jardin des Plantes et Mniszech.

Odontolabis Lowei, ♂, Parry (var. minor). (Pl. V. fig. 1.)

O. Brookeano proximus, testaceus, nitidus; mandibulis, capite, pedibusque nigris: subtus niger, maculis castaneis variegatus.

Mandibulæ capite breviores, porrectæ, leviter curvatæ, intus dentibus nodosis quinque armatæ.

Caput magnum, cum prothorace granulosum, antice emarginatum utrinque pone oculos dentatum, angulis ante oculos rotundatis, clypeo vix producto.

Prothorax transversus, plagâ magnâ nigrâ notatus, angulis posticis leviter emarginatis, profunde impressis.

Elytra testacea, nitida, glaberrima, sublente minute punctulata, basi, scutello, lineâ suturali, et limbo externo nigris.

Pedes antice elongati, tibiis curvatis, extus bidentatis, quatuor posticis inermibus, femoribus subtus plagâ castaneâ notatis.

Long. corp. unc. $2\frac{1}{2}$.

Hab.—Ins. Borneo.

Coll. Parry, ♂ (sp. unicum). ? ♀ Coll. Mniszech.

A remarkable similarity exists between *O. Lowei* and *O. Brookeanus;* upon closer examination, however, the two species are found to be abundantly distinct. Unfortunately, but one specimen of *O. Lowei* exhibiting a minor development of the mandibles has at present fallen under my notice, and having compared it with numerous specimens of *O. Brookeanus* exhibiting various degrees of development, the following differences are found apparent: The entire length of *Lowei*, $2\frac{1}{2}$ inches, exceeds considerably any specimen of its allied species I have met with. The differences in form and sculpture of the mandibles is at once conspicuous; instead of being semicircular, as they are invariably in *O. Brookeanus*, they are porrect, slightly curved from the base to the apex, much narrower, and with the upper surface more convex and covered with a dense granulation. The head is more elongate convex, with the anteocular angles rounded, not acute, and the entire surface thickly granulated. The prothorax is wider, with a black plaga, covering nearly the entire upper surface, leaving only a very narrow rufous line at the base, with a somewhat broader one at the sides; the posterior angles are less emarginate, and the granulations are much denser. The elytra are more elongate and narrower posteriorly, very glabrous, and of a deeper yellow colour; the under

sides present a remarkable difference in coloration, for instead of being, as in *O. Brookeanus*, uniformly testaceous, it is variegated. The whole of the reflexed margin, together with the epipleuræ, are black, as also the prothorax, save two indistinct lateral rufous patches.

This interesting addition to the Lucanoid Coleoptera was discovered by H. Lowe, Esq., a gentleman who has contributed so much to our knowledge of Bornean entomology.

Metopodontus Blanchardi, ♂, Parry (var. med.)
(Pl. V. fig. 2.)

M. lute fulvus, tenuissime granulosus.

Mandibulæ porrectæ, fere rectæ, capiti prothoracique æquales dente magno ad basin et quatuor alteris minoribus subapicalibus, nigris, armatæ.

Caput antice valde excavatum, vertice bituberculato.

Prothorax capite latior, marginibus externis, lineâ medianâ cum maculis duabus, prope angulos posticis, nigris.

Elytra elongata, subconvexa, angulo humerali spino minimo instructo; scutello nigro, lineâ suturali et limbo externo anguste nigris. Corpus subtus nigrum, maculis luteis variegatum.

Pedes bicolores, tibiis anticis extus subserrulatis, quatuor posticis unidentatis.

Long. corp. unc. 1; mandib. lin. 6.

Hab. — Mongolia.

Coll. Parry, Mniszech et Mus. Paris.

M. Blanchardi is readily distinguished from its allied species, *M. cinnamomeus*, *M. castaneus* and *M. foveatus*, by its very pale luteous coloration, the form and armature of the mandibles, and especially by the narrow black central line exhibited on the disk of the prothorax; this character occurs only, to my knowledge, in two other insects belonging to this group, viz., the very rare *Prosopocoilus suturalis* of Oliv., and in *P. Mohniki*, now described for the first time. To *P. occipitalis*, *M. Blanchardi* also bears a general resemblance, but the binodose front of the head necessitates its location in the genus *Metopodontus*. I may remark that I have recently seen a specimen of this insect, ticketed *M. Dauricus*, Motschulsky, in the collection of the Jardin des Plantes, collected, with various other interesting novelties, by

Mons. l'Abbé David, in the province of Mou-Pin, Eastern Thibet. This determination must, however, be erroneous (vide the author's paper on *Prismognathus Dauricus*, Etudes Entom. x. p. 10).

Prosopocoilus Mohniki, ♂, Parry, n. sp. (var. max.). (Pl. V. fig. 3.)

P. occipitali proximus, rufo-castaneus, subnitidus.

Mandibulæ elongatæ, subdeplanatæ, irregulariter arcuatæ, basi fortiter excavato, dentibus tribus subapicalibus, et pone medium processu quadrinodoso armatæ.

Caput magnum, antice valde excavatum, suprà convexum, crebre et fortiter granulosum, pone oculos inflatum, carinis duabus obliquis nigris, a medio versus oculos, notatum.

Prothorax capite latior, confertissime granulosus; maculâ disci triangulatâ, alterisque duabus versus angulos posticos; marginibus tenue nigris.

Elytra castanea, fere lævissima, scutello, lineâ basali, limbo externo, suturâque nigris; corpore subtus, cum pedibus, nigro-tinctis; tibiis anticis minute et irregulariter crenatis, quatuor posticis inermibus.

Long. corp. lin. 15; mandib. lin. 10.

Hab.—Java.

This species is closely related to *P. occipitalis*, Westw., but may readily be distinguished from it by its larger size and denser colour; its head is more deeply excavated in front, the carinæ are considerably longer, extending from the centre to the anteocular angle, and the sides behind the eyes being merely swollen instead of dentate; the prothorax has a large central triangular black mark extending from the anterior to the posterior margin, and the elytra are very finely chagreened, whereas in the allied species they are distinctly punctate. We are indebted to Dr. Mohnike, a zealous entomologist long resident in the island of Java, for the discovery of the present species, stated to be from that island, where it has only recently been discovered, but in very great abundance. Unfortunately all the specimens captured of various stages of development were males. I possess from the island of Formosa a single female individual, which, were it not for the divergence of locality, I should feel disposed to refer to the present species.

Lissotes capito, ♂, H. Deyrolle; ♀, Parry.
(Pl. V. figs. 4 and 5.)

"Large, depressed, deep chestnut, the forehead and legs of a lighter hue, head and thorax very large.

"Head very large, with a triangular impression on the forehead, parallel at the sides, anterior angles rounded, shallowly semicircularly emarginate in front, tuberculated laterally behind the eyes; above smooth, without any trace of punctuation; beneath with a rather large triangular impression on each side for the reception of the antennæ in repose, these similar in structure to those of the allied species, the three apical joints produced into leaflets.

"Prothorax much dilated behind, anterior margin nearly straight; sides oblique, sinuated towards the middle, posterior margin semicircularly emarginate; anterior angles slightly, posterior angles strongly rounded; lateral and posterior margins margined and finely ciliated; above smooth, with a slight depression on each side, near the anterior margin; middle of disk and lateral margins slightly punctate.

"Scutellum short and broad, truncate behind.

"Elytra subparallel, slightly narrowed anteriorly; shoulders somewhat prominent in front, margined and ciliated at the sides, shining, covered with a sparse punctuation and a very short hispid golden-silky pubescence, each elytron with four rather obsolete ridges.

"Beneath with the abdomen somewhat thickly punctate, the punctuation sparser on the legs and thorax, with a pubescence similar to that on the upper surface, but shorter and denser; legs clothed with longer hairs, disposed in ciliæ on the intermediate and posterior tibiæ, the anterior tibiæ armed externally in front with two large teeth, and behind with five or six small ones."

(H. Deyrolle.)

L. capito, ♀.

The female with the body subdepressed, broad and flat, strongly punctured; anterior angles of the head less produced than in the male, armed with a minute tubercle behind the eyes, which are partially divided by the canthus. *Prothorax* slightly rounded at the sides, posterior angles scarcely emarginate, with a faint central longitudinal channel and a shallow depression on each side. *Elytra*, as in the male, slightly costate. *Scutellum*

exceedingly small, transverse. *Mandibles* short, tridentate at the apex. *Tarsi* short.

I am indebted to M. Henri Deyrolle for permission to incorporate the description of the ♂ in the present paper, and to the kindness of Mr. F. Pascoe to add a description of the ♀. A single example of the ♂ exists in the collection of Count Mniszech, and both sexes in that of Mr. Pascoe, their habitat being the Chatham Islands, situate about 400 miles from the eastern coast of New Zealand. I avail myself of the opportunity to add a few remarks upon the species composing the genus.

The genus *Lissotes* was proposed by Professor Westwood (vide Trans. Ent. Soc. N. S. iii. p. 213), and contains the numerous Australian species belonging to the family of the *Dorcidæ*, which are represented in South America by the *Sclerostomi* of Dr. Burmeister (vide Handbuch der Entomologie), and exhibit such diversity of form that I am now disposed to modify the grouping in my Catalogue of the several species at present known.

Professor Westwood (loc. cit., p. 214) distributes the species into two sections, characterized by the form of the mandibles; but subsequently, in describing some interesting new species (Trans. Ent. Soc. 1871, p. 353), he proposed other characters as distinguishing the Tasmanian species. It is upon these last characters that I have based the following tabular arrangement, embracing the whole of the Australian species at present known. I admit it is not quite satisfactory, since it involves the approximation of somewhat incongruous forms, yet it is nevertheless the best I can at present offer:—

A. Posterior angles of prothorax oblique, with a prominent angle opposite the shoulders of elytra.
  a. Fore margin of prothorax anteriorily produced in the middle.
    * Prothorax with a small central polished tubercle. *L. cancroides: L. reticulatus.*
    ** Prothorax with two small tubercles conjoined in middle of front margin. *L. Menalcas: L. subtuberculatus.*
    *** Prothorax with produced lobe slightly emarginate. *L. punctulatus. L. Noræ Zealandiæ.*
  b. Fore margin of the prothorax straight; front of the head strongly retuse. *L. capito: L. pelorides* (♀): *L. curvicornis.*
B. Posterior lateral margins of prothorax rounded. *L. Launcestoni: L. obtusatus: L. opacus: L. latidens: L. forcipula: L. crenatus: L. subcrenatus* (♀): *L. fuscicornis.*

Nigidius cribricollis, ♀?, Parry. (Pl. V. fig. 6.)

N. Delegorguei proximus, niger, vix nitidus, prothoracis disco, ubique regulariter punctato, in medio leviter sulcato, angulis anticis profunde incisis.

Mandibulæ punctatæ, dextra 1-sinistra 2-dentatæ, suprà in cornu suberectum parvum productæ.

Caput suprà valde excavatum, crebre et fortiter punctatum, lateribus ante oculos semicirculariter productis.

Prothorax ubique regulariter punctatus, leviter canaliculatus, margine antico tuberculato.

Elytra anguste costata, interstitiis crebre et irregulariter punctatis, corpore subtus ubique grosse et fortiter punctato.

Long. corp. lin. 7.

Hab.—Afric. Occid.

In Coll. Mus. Brit., Mniszech, et Parry.

Allied to *N. Delegorguei*, Thomson, but at once distinguished by the wider and more deeply excavated head, by the strongly emarginate anterior angles of the prothorax, as well as by the more uniform character of its sculpture; the punctuation being regular and extending over the entire upper surface of the prothorax, a character not exhibited in any other of the African species; it is, moreover, not nearly so shining.

In the British Museum collection there exists a specimen of this insect, labelled "Nigidius cribricollis," Reiche, a manuscript name which I have much pleasure in adopting.

Nigidius distinctus, ♂, Parry, n. sp. (Pl. V. fig. 7.)

N. cornuto M'Leay, proximus, ater, nitidus, punctatissimus, angulis ante oculos incisis.

Mandibulæ punctatæ, sinistra bidentata, dextra inermis, suprà in cornu magnum curvatum suberectum, productæ.

Caput antice excavatum, grosse punctatum, ante oculos emarginatum.

Prothorax lateribus rectis, angulis anticis rotundatis posticisque sinuatis, in medio longitudinaliter sulcatus margine antico elevato, tuberculo minutissimo instructo.

Elytra ad basin prothorace paulo angustiora, versus apicem latiora, singulis striis 8 elevatis lævibus, interstitiis grosse punctatis, angulo humerali acuto; tibiis anticis 5 aut 6 tuberculis parvis, quatuor posticisque infrà medium spino singulo acuto armatis, corpore subtus punctatissimo.

Long. corp. lin. 7.

Hab.—Cambodia.

Coll. Mniszech et Parry.

N. distinctus is distinguished from all the other known species of the genus by the sides of the head being emarginate instead of rounded, forming two distinct acute

angles, the punctuation is also considerably stronger (with the exception of *N. obesus*) than in all the other Asiatic species we are at present acquainted with; the scrobiculate character of the punctuation exhibited in the interior of the fovea on the thorax in the African species appears to be wanting. I am indebted to Count Mniszech for the specimen I possess.

Nigidius Bubalus, Swed. Act. Holm. 1787, pl. viii. fig. a, b, c.
auriculatus, Klug, Erm. Reis. 1835.
integer, Westw. Ent. Mag. v. 1838.
Midas, De Casteln. Hist. Nat. Ins. 1840.
nitidus, Thomson, Ann. Soc. Ent. Fr. 1862.
? * *vervex* (*Figulus*), Dej. Cat. sec. Burm. Handb. v. p. 432.

As no well authenticated specimen of this insect has fallen under my notice, I am not in a position to decide as to which of the West African species of *Nigidius* at present known *N. Bubalus* of Swederus is to be referred; it has even been suggested to me that the insect in question might possibly not even belong to this genus; but I think from the description, as well as from the figures (although but indifferently executed), that there can be but little doubt upon this point. The habitat given by the author, of North America, is evidently erroneous; and seeing that Drury's collection was especially rich in West African species, it is most probable that from thence the insect originated. (Possibly the type specimen may still exist in the late Mr. Macleay's collection in Australia, who, if I am correctly informed, purchased largely at the sale of Drury's collection.) Judging from the description and the figures given, the following two species, viz. *N. auriculatus*, Klug, and *N. auriculatus*, Guérin, both from West Africa, appear to me to be the most nearly allied to *Bubalus;* but as Swederus, neither in the description, nor the figures, alludes to a very important character peculiar to *N. auriculatus* of Guérin, viz. the deeply emarginated anterior angles of the prothorax, a character which does not exist in *N. auriculatus*, Klug, I am very much disposed to believe that the above synonymical arrangement will prove to be correct, especially as, through the kindness of Professor

* Professor Westwood, *loc. cit.*, notifies *F. vervex*, Dej., as being identical with *N. auriculatus*, Guérin.

Westwood and Count Mniszech, considerable additional material, enabling me to arrive at this conclusion, has been available to me.

The species composing the genus *Nigidius* may be sectionized thus :—

A. Mandibles robust, with a recurved process at the base in both sexes, less produced in the females.
  a. Prothorax rugose, punctate with a central fovea, anterior angles more or less emarginate. *N. grandis: N. Delegorguei: N. auriculatus: N. cribricollis.*
  * Anterior angles of prothorax non-emarginate. *N. Bubalus: N. cornutus: N. distinctus: N. obesus.*
  b. Prothorax smooth, non-foveate; anterior angles of prothorax produced, non-emarginate. *N. lævicollis: N. formosanus.*
B. Mandibles ♂ slender, evidently recurved at the apex, with a nodose tubercle at the base; ♀ mandibles less recurved and simple. Prothorax smooth, non-foveate. *N. Madagascariensis.*
C. Mandibles simple. Prothorax smooth, with a central fovea. *N. Parryi: N. trilobatus.*

Figulus sublævis, Palis. de Beauv. (*Lucanus*), Ins. Afric. et Amér. i. 3.
sublævis, Westw. Ent. Mag. v. p. 262.
„ Burm. Handb. der Ent. p. 436.
anthracinus, Klug, Ins. Madg. 85.
ebenus, Westw. loc. cit.
nigrita, Westw. loc. cit.
monilifer, Parry, Proc. Ent. Soc. 1862, p. 113.

Having recently had the opportunity of examining numerous specimens of the several insects alluded to above, I have arrived at the conclusion that Dr. Burmeister (loc. cit.) is fully justified in uniting them as one species. With reference to the character specifically assigned, to the number of striæ exhibited on the elytra, this character is found, as already alluded to by Dr. Burmeister, to be most capricious: the striæ, or their rudiments, varying from 1 to 6.

In the var. *F. nigrita*, Westw., exhibiting a somewhat small development of this species, the punctuation on the sides of the prothorax is somewhat stronger, but in other respects corresponds with a specimen in my collection of *F. anthracinus*, Klug.

Figulus trilobus, Westw. Ent. Mag. v. 263.

Hab.—N. Hollandia.

Figulus trilobus may, I think, with great propriety be removed to the genus *Nigidius*, to which it appears to me

to assimilate more closely in the following respects: the short robust mandibles, which are slightly recurved at the apex; the deeply excavate head, with the sides rounded and strongly produced; the form of the thorax, with its anterior trilobate process; and, finally, the elytra, on which the costa are more prominently defined, the sculpture of the interstices, as well as the punctuation, being considerably stronger than in any species pertaining to the genus *Figulus*. *N. trilobus* belongs to the third section of the genus, characterized by the mandibles being simple, or unarmed, on their upper surface.

Figulus.

Sectional arrangement.

The species belonging to the genus *Figulus* may be thus sectionized:—

A. Elytra smooth, partially striate. *F. lævipennis.*
B. Elytra partially, but irregularly, punctate-striate. *F. sublævis.*
C. Elytra regularly punctate-striate. *F. striatus, F. regularis, F. foveicollis, Manillarum, Scaritiformis,* and others.

XIII. Remarks on the affinities of the genus *Nicagus*, Leconte. By Mons. Henri Deyrolle. Communicated in a letter to Major F. J. Sidney Parry, F.L.S.

"I have availed myself during the past few days of certain leisure time to examine your beetle attentively, and regret that I am compelled to differ entirely from our learned and esteemed friend Mr. Westwood,* and find that it is impossible to separate *Nicagus* from the *Lucanidæ*, and that I cannot locate it satisfactorily among the *Lamellicornia*, in whatever group I attempt to place it.

"It presents one slight differential character, and one alone, from the *Lucanidæ*, namely, the narrow *mentum*, but in all other respects it coincides so entirely that I have not the shadow of a doubt that the position of *Nicagus* is in close proximity to *Mitophyllus*.

"Observe that *all* its organs correspond with those of that group; take for instance for comparison a female specimen of your *M. irroratus:* the *head* I find is nearly similar; the *antennæ* likewise, with the lamellæ a trifle thicker; the *prothorax* agrees in every respect with that

* Proc. Ent. Soc., 7 March, 1870.

of the species of the group, crenulated as in them, and with nothing analogous amongst the *Melolonthidæ;* the *legs*, it appears to me, settle the question beyond a doubt, for in no group of *Lamellicornia* do we meet with this characteristic form of the *anterior tibiæ*, so elongate, square at the apex, dilated at the tip, dentate like a saw behind the large teeth; the *tarsi* with the claws very large are identical with those of *Mitophyllus;* the *body* has entirely the form and characters of those of the *Lucanidæ;* the margined abdomen fitting close to the reflexed margin of the elytra is entirely that of a *Lucanid*, although this character is found in many *Lamellicornia;* lastly, the *mandibles* and *palpi* agree in every respect with those of the family to which your insect should be referred; and I repeat that I entertain not the slightest doubt and do not hesitate to consider it a *Lucanid*, and think that you will participate in this opinion."

Obs.—I should remark that Dr. Leconte has already suggested the reference of this insect to the *Lucanidæ*. *Vide* my observations, Proc. Ent. Soc., 7 February, 1870. —F. J. S. P.

Nicagus obscurus. (Pl. V. fig. 8, a. b.)

Ochodæus obscurus, Leconte, Act. Philad. 1848, p. 86.

Nicagus obscurus, Leconte, Classif. Coleop. N. Am. 1861, p. 136.
Parry, Proc. Ent. Soc. 1870, p. iii.
Westwood, Proc. Ent. Soc. 1870, p. ix.

EXPLANATION OF PLATE V.

1. *Odontolabis Lowei*, ♂. Parry.
2. *Metopodontus Blanchardi*, ♂. Parry.
3. *Prosopocoilus Mohniki*, ♂. Parry.
4. *Lissotes capito*, ♂. H. Deyrolle.
5. „ „ ♀. Parry.
6. *Nigidius cribricollis.* Parry.
7. „ *distinctus.* Parry.
8. *Nicagus obscurus.* H. Deyrolle.

a. „ „ (antenna).
b. „ „ (labium).

XIV. *Descriptions of new genera and species of* Tenebrionidæ *from Australia, New Caledonia and Norfolk Island.* By Frederick Bates.

[Read 7th April, 1873.]

The following is a list of the new genera and species described in this paper:—

Nyctozoilides.

Nyctozoilus Deyrollei	Australia.
Styrus (n. g.) *elongatulus*	Queensland.
Amphianax (n. g.) *subcoriaceus*	Australia.
Agasthencs (n. g.) *Westwoodi*..	S. Australia.

Cyphaleides.

Amarygmimus (n. g.) *Duboulayi*	Champion Bay.
Anausis (n. g.) *Macleayi*	„
Oremasis Haagi	Australia.
Apomestris (n. g.) *Westwoodi*	Victoria.
Decialma ? Pascoei	Queensland.
Mithippia Jansoni	Champion Bay.
Ctimene (n. g.) *Breweri*	Albany.

Amphidorides.

Ectyche scabripennis	Nicol Bay.
„ *sculpturata*	„
„ *tuberculipennis*	Champion Bay.
Micrectyche (n. g.) *intermedia*	„
„ *ferruginea*	Swan River.
„ „ var. ? *dubia*	Champion Bay.
„ *Ryei*	„

Adeliides.

Adelium (*Seirotrana*) *strigipenne*	Australia.
„ *nigroæneum*	New Caledonia.
„ *Fairmairei*	„
„ *marginatum*	„
„ *externecostatum*	„
Dystalica subpubescens	N. S. Wales.

Misolampides.

Metisopus (n. g.) *purpureipennis*	Norfolk Island.
Chlorocamma (n. g.) *carenipennis*	New Caledonia.
Episopus (n. g.) *politus*	„
Isopus robustus	„
„ *Allardi*	„
„ *cyaneus*	„
„ *caledonicus*	„
Omolipus oblongus	Champion Bay.
„ *parvus*	Swan River.

A detailed description is also given of the genus *Isopus*, Montrouz., and of the species *I. Blanchardi*, Montrouz., and *I. oxygaster*, Montrouz.

NYCTOZOILIDES.

Nyctozoilus Deyrollei, n. sp.

This is the species I have alluded to (Trans. Ent. Soc. 1872, p. 271), in a comparison of its form with that of the genus *Saragodinus*—as the *N. obesus*, Guérin. Having since that time forwarded the specimen to M. E. Deyrolle, he kindly compared it with the type of *obesus*, and, finding it distinct, has furnished me with the following comparisons of the two species:—

N. obesus, Guérin (type).

Head with a slight impression on the vertex.

Prothorax narrower, the sides regularly rounded and but little expanded in the middle; front angles slight, the apex with but a trace of a thickened margin ("bourrelet") at each side; the lateral gutter continuous throughout its length.

Elytra with the shoulders rounded, gradually widened at the sides to two-thirds their length.

Flanks of prothorax slightly indistinctly punctured in the middle.

Body (or form) narrower, more oblong.

Long. 9 lin.; width of prothorax across the middle $3\frac{2}{3}$ lin.

N. Deyrollei, n. sp.

Head coarsely, irregularly rugose.

Prothorax broader, sides strongly expanded in the middle, strongly narrowed in front and behind; front angles very prominent, the apex thickly margined at each side nearly to the middle; the lateral gutter interrupted by a prominency in the middle.

Elytra broader, more rounded at the sides, shoulders very strongly rounded, the greatest width towards the middle.

Flanks of prothorax covered with coarse, prominent wrinkles.

Body broader, more rounded.

Long. $9\frac{1}{2}$ lin.; width of prothorax across the middle 4 lin.

Hab.—I cannot give any more definite locality than "Australia." A single example obtained from the collection of Major Parry. Judging from the kind of ticket attached to the specimen, I am strongly inclined to think it came from *Western* Australia, as similar tickets were attached to other insects that undoubtedly came from that quarter.

Styrus, n. g.

Near to *Nyctozoilus*. *Head* relatively narrower and longer, front angles of *epistoma* less rounded, so that the sides appear more parallel: *eyes* larger; *antennæ* much longer, subfiliform, moderately perfoliate, very slightly depressed; scape strongly obconic, joint 3 fully equalling in length 4 and 5 together, subcylindric, 4—10 subcylindric, or very slightly obconic, 4—8 subequal, 9—10 a little shorter, 11 longer than 10, rounded at apex, the last 4 joints finely densely pubescent: *prothorax* nearly as

long as wide, a little narrower, and more thickly margined at apex than at base; apex strongly emarginate, the angles prominent, acute, directed forwards; sides feebly rounded; hind angles acute, directed behind, and reposing on the shoulders of the elytra; base emarginate, slightly sinuously sloping at each side from the middle of the margin to the hind angles; lateral margins reflexed, thickened, rather strongly crenate in the middle, broadly channelled within; *scutellum* strongly transverse: *elytra* obovate, middle of base emarginate, this—with the emargination of the base of prothorax—leaves exposed the scutum of the mesothorax; lateral margins very narrow, slightly reflexed, a little sinuous behind the shoulders and near the apex: *epipleural fold* narrower than in *Nyctozoilus*, entire: *prosternum* convex, longer than in *Nyctozoilus;* its process robust, subhorizontal, broadly margined at each side, prominent and narrowly rounded behind: *mesosternum* subvertical, and deeply concave, in front, its epimera posterior: *metasternum*—between the coxæ—as long as the 2nd ventral segment: *intercoxal process* wide, broadly rounded in front: 1st and 2nd ventral segments slightly emarginate—and narrowly coriaceous—in the middle behind, the 3rd and 4th sinuously emarginate, and broadly coriaceous behind: *legs* rather long, slender; *femora* feebly claviform; *tibiæ* sublinear, feebly spurred, the intermediate very slightly bowed, the posterior with a fine tomentose line down the apical half within: *tarsi* elongate, slender, pilose and channelled beneath, the joints of the anterior not imbricated; the first of the posterior nearly as long as the 3 following united. Body very elongate-ovate, convex; elytra strongly, and somewhat reticulately, costate.

I may be wrong in placing this genus near to *Nyctozoilus*, the likeness to that genus not being at all striking. I think, however, that the form of head, the thickened edges, and expanded—or broadly guttered—sides of prothorax, the strongly transverse scutellum, the very convex prosternum, and the broad intercoxal process, warrant me in so doing. I have but little doubt that the *species* is the same as that described by Macleay (Trans. Ent. Soc. N. S. Wales, 1872, p. 284) under the name of *Nyctozoilus elongatulus*. To avoid confusion (and as one can never be quite certain in these matters without absolute comparison of specimens), I shall give my species the same specific title.

Styrus elongatulus, n. sp.?

Elongate-ovate, black with a chocolate tinge, the thickened edges of prothorax, and costæ on elytra, shining: head coarsely, and slightly reticulately, punctured, impressed on the crown, front declivous, and furrowed down the middle; epistomal suture very distinct, broad: prothorax a little wider (in its widest part) than long,* densely —except on the guttered margins—punctured, a small elongate space on the disk smooth; two shallow foveæ at each side the disk, and a long, transverse shallow impression near the base: elytra obovate, convex, sinuously contracted and narrowly rounded at apex; each with three distinct, strongly elevated, slightly undulate costæ, crenulate at top; these put forth irregular lateral branches, which ordinarily extend but half across the intervals, and are sometimes only represented by detached tubercles; the suture is also costate, and becomes irregularly bifurcate before the scutellum; there is also a finer submarginal costa; the 1st and 3rd costæ are united near the apex and enclose the 2nd; the spaces between these elevated lines are flat, or slightly concave, and are sparsely studded with well-defined punctures: legs pitchy; underside dull black, distinctly—but finely and not closely—punctured; the head beneath, and flanks of prothorax, more strongly punctured.

Long $8\frac{1}{2}$ lin.; lat. elytr. $3\frac{1}{2}$ lin.

Hab.—Queensland. Two examples.

Amphianax, n. g.

Sides of *submentum* not dentiform: *mentum* and *labium* trapezoidal, convex: *palpi* wanting: head rather short, deeply immersed in prothorax, vertex convex: *antennary* orbits prominent, projecting laterally beyond the eyes, a little reflexed, and thickened at the edges; *epistoma* very short, front angles slightly bent down and slightly rounded; apex broadly emarginate, the sutural line faint at the middle: *labrum* strongly transverse, convex, broadly emarginate in front, the hinge broadly visible: *eyes* large, reniform: *prothorax* transverse, a little depressed, strongly arcuate-emarginate—and very finely margined—in front, broadest behind the middle, broader at base than at apex,

* Macleay gives it as rather longer than wide, and without actual admeasurement it does *appear* to be so.

sides well rounded, front angles outwardly curvedly produced, very prominent, acute; basal angles shorter, acute, outwardly directed, free; sides a little expanded and slightly attenuated, the edges moderately and almost uniformly thickened; base rather strongly bisinuate, broadly lobed in the middle, finely margined: *scutellum* convex, moderately transversely and curvilinearly triangular: *elytra* oblong-oval, but little convex, a little broader at base than base of prothorax, middle of base subtruncate, slightly oblique at each side; shoulders feebly rounded, lateral margins reflexed and slightly canaliculate within; *epipleural fold* moderately broad, subhorizontal, entire: *legs* moderate, rather slender; *femora* compressed, feebly claviform: *tibiæ* sublinear, slightly thickened at apex, the posterior with a fine tomentose line within, near the apex, spurs minute, two to each; *tarsi* channelled beneath (the posterior at least), and clothed—as well as the apex of the tibiæ within—with fine golden hairs, first joint of the intermediate nearly as long as the two following united, first of the posterior longer than the two last: *intercoxal process* wide, apex broadly rounded: *prosternum* full and convex, its process robust, horizontal, prominent, and rounded behind: *mesosternum* subvertical and broadly concave in front, its epimera posterior: *metasternum* longer than ordinary in this group, equalling in length the 2nd ventral segment: 3rd and 4th ventral segments slightly sinuously emarginate, and broadly coriaceous, behind: *antennæ*—except the first five joints, which are like those in *Onosterrhus*—wanting: *body* oblong-oval, subdepressed, smooth.

The general form, and the scutellum, approach this genus to *Cilibe*, but the form of head, the thickened lateral edges of prothorax, the bulging prosternum, the broad intercoxal process, the legs, and the tarsi, are more those of the *Onosterrhus* group. The metasternum is longer than in any of the related genera.

Amphianax subcoriaceus, n. sp.

Oblong-oval, subdepressed, black, opaque: head minutely punctured, a shallow, foveate depression at each side the front, close to the eye: prothorax not visibly punctured, a slight oblique impression at each side the basal lobe: scutellum sparsely, but distinctly punctured:

elytra indistinctly costate, faintly subreticulately wrinkled, or subalutaceous, sparsely, finely and irregularly punctured, with a slight indication, at the sides, of a seriate arrangement between the costæ; at the extreme margin the usual row of close-set punctures, not reaching the apex; underside, and legs, shining black; abdomen finely longitudinally wrinkled, and—together with the legs—minutely punctulate.

Long. 6½ lin.; lat. elytr. 3 lin.

Hab.—Australia.

AGASTHENES, n. g.

Mentum transverse, anterior angles strongly inflexed, middle portion large, prominent, transversely subcordiform, and sulcate down the middle from apex nearly to base: *labium* short, strongly transverse, broadly emarginate in front, angles rounded: *palpi* wanting: sides of *submentum* produced into a very large, angular, prominent tooth: *gula* with a deep, longitudinal furrow which becomes faint and bifurcate behind: *head* large, subquadrate, immersed in prothorax nearly to the eyes; *front* very long, plane, gradually declivous: *antennary orbits* long, narrow, pad-like ("en bourrelet"), subparallel, separated from the front by a deep, straight groove, extending from the eye to the anterior border: *epistoma* short, trapezoidal, front angle strongly bent down, apex slightly emarginate, the suture represented by a faint angulate line at each side, and a slight depression in front of the line, within the angle: *eyes* narrowly reniform, projecting beyond the sides of the antennary orbits: *labrum* prominent, strongly transverse, angles rounded, slightly emarginate at the middle of the anterior border, membranous hinge visible: *prothorax* wider than long, arcuate-emarginate in front, front angles very prominent, acute, directed forward, sides gradually widened to beyond the middle, suddenly constricted near the base, hind angles acute, directed outwards, not overlapping the shoulders, lateral margins somewhat expanded, attenuate, the edges strongly thickened, gradually more feebly so from behind the middle to the hind angles; base feebly trisinuate, narrowly margined, apex strongly margined at each side, not at all in the middle: *scutellum* convex, strongly transversely triangular: *elytra* closely applied to—and wider than—the base of the prothorax, elongate, moderately convex, shoulders rounded, sides very

slightly widened to beyond the middle, thence gradually—and slightly sinuously—narrowed to the apex, margins reflexed and slightly canaliculate within, very strongly so at the shoulders ; at near the middle of the basal margin there is a short, elevated ridge which seems to be a detached remnant of the prominent, reflexed margin at the shoulder ; *epipleural fold* broad, extending to apex : *prosternum* very full and convex, its *process* robust, horizontal, prominent behind : *mesosternum* vertical in front and broadly and deeply concave, its epimera posterior : *metasternum* short : *intercoxal process* broad, parallel-sided, apex subtruncate and, in common with the base of the metathorax, strongly indented ; hind margins of 3rd and 4th ventral segments angularly (at each side) emarginate, and broadly coriaceous : *legs* moderate, femora strongly compressed, attenuate at base ; tibiæ straight, a little thickened at apex, the anterior with a single spur, the others with two very small, almost invisible ; the hind tibiæ with a faint tomentose line near the apex within : *tarsi* wanting : *antennæ*—except the first six joints, which are absolutely similar to those in *Hypocilibe*—wanting : *body* elongate, moderately convex, smooth.

The genera of the *Nyctozoilides*—like those of the *Tenebrionides*, *Cnodalonides* and *Helopides*—are now becoming almost unmanageable by reason of the complexity of their relationship, or affinity, with the genera of other groups as established by Lacordaire. The present genus has lost, in feature, every trace of connection with the true *Helæides*, its facies being more that of the *Cœlometopides*. The majority of its characters, however, are decidedly those of the *Onosterrhus* group, viz., the deeply immersed head ; the prothorax very strongly emarginate in front, with broadly guttered sides, and thickened edges ; the short, strongly transverse scutellum, &c. The form of the head, and the prothorax strongly constricted near the base, will at once serve to distinguish this genus from *Onosterrhus*.

Agasthenes Westwoodi, n. sp.

Elongate, black, smooth, opaque ; labrum and antennæ dark chestnut-red : head and sides of prothorax finely and not closely punctuated ; disk of the latter, and the elytra, exceedingly minutely (not visibly to the naked eye) punctulate ; elytra having at the extreme margin the usual row of rather close-set punctures, which do not extend to the

apex; at each side a shallow furrow extending from near the shoulder to near the apex: underside black; legs pitchy-black, shining; head beneath coarsely punctured; underside of the expanded margins of the prothorax finely transversely wrinkled; prosternal process narrowly rounded behind, sulcate at each side between the coxæ, and—together with the legs and abdomen—punctured, the punctures of two sizes, the smallest being the most numerous; femora transversely rugulose; abdomen longitudinally rugose at each side.

Long. 10 lin.; lat. elytr. $4\frac{1}{8}$ lin.

Hab.—South Australia. One example.

CYPHALEIDES.

Amarygmimus, n. g.

♂.—*Mentum* trapezoidal, very convex; *labial palpi* short, last joint large, triangular; *maxillary palpi* short, very robust, last joint very large, broadly securiform: *head* short, wide, almost rounded in front, deeply immersed in prothorax: *front* declivous, longitudinally depressed, or channelled: *antennary orbits* slightly reflexed, rounded: *epistomal suture* well marked, almost semicircular: *eyes* large, prominent, transverse, slightly notched in front, not approximate: *antennæ* rather short, the joints becoming thicker, gradually shorter, and more strongly obconic, outwardly; 9—10 transverse; 11 large, briefly ovoid: *prothorax* transverse, moderately convex; slightly sinuously emarginate in front; sides gradually narrowed from base to apex, a little incurved at the hind angles, finely margined; base broadly lobed in the middle; none of the angles at all prominent: *scutellum* large, equilaterally triangular: *elytra* oblong, convex; base sinuous and closely applied to prothorax; shoulders strongly rounded; sides subparallel to three-fourths their length, thence gradually narrowed to apex, finely margined: *epipleural fold* complete—but much narrowed—behind: *prosternum* short, very strongly compressed before the coxæ, keeled, the keel terminating in front in a conical tubercle; the process broad, a little declivous and broadly rounded behind: *mesosternum* vertical in front, deeply notched, or excavate, in form of V: *metasternum* elongate: *intercoxal process* rather narrow, rounded in front: *legs* rather

robust; *femora* subfusiform; *tibiæ* slightly thickened from base to apex, having a tuft of hairs at the apex beneath; *spurs* small, acute: *tarsi* with the 1st joint elongate in all; joint 1—3 of the two anterior pairs very strongly expanded, padded beneath and densely fringed with longish hairs at the sides, the 4th joint very small; the claw joint short and robust to the anterior, longer and more slender in the others: *body* elongate-oval, convex, shortly pilose.

♀.—Unknown.

A very distinct and singular genus, the form recalling that of some of the more oblong species of *Amarygmus*.

Amarygmimus Duboulayi, n. sp.

♂.—Elongate-oval, convex, shining; clothed above with rather short, erect, fine, black hairs; much denser on head and prothorax: head and prothorax dark green with purplish reflections; the former rather closely, the latter more sparsely, punctured: prothorax closely embracing the sides of the head: scutellum purple, punctured: elytra closely punctured, slightly transversely (almost reticulately) wrinkled, and, save down the middle, feebly costate; narrowly down by the suture the colour is golden, or brassy-green, then a broad stripe of a purple colour, then dark green with a cyaneous tinge, then purple again down by the margin; these three stripes of colour more or less confused and reflecting each other: underside and legs sparsely pilose, chalybeous: antennæ and palpi pitchy.

Long. 5⅓ lin.; lat. elytr. 2½ lin.

Hab.—Champion Bay. One example by M. Duboulay.

Anausis, n. g.

Near *Prophanes*, Westw.:—*Head* much larger behind the eyes; *eyes* larger, more prominent, approximate above; *antennary orbits* much smaller, more prominent, subangulate, almost tuberculiform; *epistoma* shorter, not emarginate in front: *antennæ* longer, more slender; joint 3 very long; 4—7 subequal; 8—10 gradually shorter, but scarcely stouter than the preceding; 11 longer than 10, rounded at apex: *prosternum* much shorter, abruptly elevated between the coxæ; the process briefly produced and triangulate behind: *elytra* longer, narrower, less con-

vex; the expanded lateral margins broader, of equal width from behind the shoulders to near the apex, where it terminates in a long, acute spine: *body* elongate, narrower, more parallel, less convex, strongly pilose.

I have no doubt the *Prophanes metallescens* of Westwood will enter into this genus.

Anausis Macleayi, n. sp.

Elongate, subparallel, depressed; body and legs clothed with rather long, erect, slender, black hairs: head and prothorax shining pitchy-brown, rather closely punctured: prothorax transverse, sinuous in front; broadly rounded at base; sides very gradually narrowed to the front, strongly, and somewhat abruptly, incurved before the hind angles, which are small, acute, and outwardly directed; front angles produced into long acute spines, which are outwardly directed: scutellum shining black, smooth: elytra rather regularly punctured, the punctures not crowded, larger than those on prothorax; the basal two-thirds dark green with cyaneous reflections, paling behind into golden green; the apex brilliant metallic purple; the sutural edge and the lateral edges brilliant green; the apex of each elytron is pointed and produced beyond the spine, which is long, acute and slightly outwardly directed: underside, legs and antennæ shining black: legs long, slender.

Long. 9 lin.; lat. elytr. $3\frac{1}{2}$ lin.

Hab.—Champion Bay. One example by M. Duboulay. Must be very close to *Prophanes metallescens*, Westw.; but at once to be distinguished by the differently-coloured elytra, with the apex pointed, not truncated as in *metallescens*.

Oremasis Haagi, n. sp.

Above entirely brilliant, metallic green with coppery reflections, or with the elytra fiery-coppery with green reflections, or bronzed coppery in others: head somewhat closely and (in the ♂) reticulately punctured: prothorax gradually—and faintly curvedly—narrowed from base to apex; apex decidedly sinuously emarginate; sides moderately dilated, a little reflexed, and closely and coarsely punctured, disk very finely and remotely punctulate in ♀; in the ♂ the punctuation of the disk is much stronger and closer, and it is finely rugulose at each side: scutellum sparsely punctured: elytra uniformly and very distinctly

—except at apex—but not very closely punctured ; underside metallic green variegated with coppery, purple, &c. ; legs, antennæ and palpi entirely testaceous-yellow.

In the ♂ the entire punctuation is stronger and closer, the pro- and meso-tarsi are dilated, and the size is smaller.

Long. 7½ to 9 lin. ; lat. elytr. 3¼ to 4 lin.

Hab.—Queensland ? Four examples.

Very distinct from *O.* (*Adelium*) *cupreus*, Gray ; which has the prothorax wider—and scarcely sinuously emarginate—in front ; the sides more rounded, more expanded, flatter, broadly testaceous, and nearly smooth, and the disk impunctate : the elytra more gibbous, very faintly and remotely punctulate, the reflexed margins reddish-testaceous ; and the legs, antennæ and palpi reddish-testaceous, with the apex of the femora broadly cyaneous.

Apomestris, n. g.

Mentum trapezoidal, convex : *maxillary palpi* wanting : *eyes* rather large, not prominent, free : *epistoma* short, slightly—and broadly—emarginate in front, the suture strongly marked : *antennary orbits* long, sides subparallel : *antennæ* moderate, joint 3 elongate, 4—7 subequal, subcylindric, or elongate-obconic, 8—10 gradually shorter, strongly obconic, 9—10 scarcely transverse, 11 large, rounded at apex : *prothorax* depressed, transverse, strongly emarginate in front, angularly so at each side, anterior angles moderate, scarcely produced, subacute, a little depressed, slightly outwardly directed ; sides very slightly narrowed from the base to before the apex, thence more rapidly incurved, the edges thickened ; base rather strongly bisinuate : *scutellum* broad, rounded behind : *elytra* wider than prothorax ; base sinuous ; shoulders convex, the angles rounded ; irregularly convex, the greatest convexity before the middle, thence gradually declivous to apex ; sides irregularly expanded at the margins, very finely bordered ; apex narrowly rounded ; *epipleural* fold very gradually narrowed behind : *prosternum* rather short, strongly compressed, carinate, the apex produced ; its process prominent behind, compressed, lanceolate : *mesosternum* vertical in front, very strongly, deeply and widely excavated : *intercoxal process* wide, apex broadly rounded : *legs* rather stout ; *femora* faintly emarginate on the inner edge, from near the apex ; the anterior with a short tooth,

or spine, in front of this emargination, the posterior with a very broad, pointed, flattened tooth, beyond the middle; *tibiæ* feebly sinuous: 1st joint of hind tarsi elongate: *body* somewhat broadly ovate, pilose.

Near *Altes*, Pascoe, but at once to be distinguished from that and from all the other genera of the subfamily by the dentate pro- and meta-tibiæ.

Apomestris Westwoodi, n. sp.

Somewhat broadly ovate, convex; body and legs covered with moderately long, slender, black hairs: entirely of a rich deep brown, very glossy and slightly bronzed, variegated on the elytra with irregular markings of a lighter —castaneous brown—colour; some of these marks assume the form of ocellated spots: head with a foveate depression on the front, irregularly and not closely punctured; prothorax irregularly punctured, sparse on the disk, more crowded and coarser at the sides; two slight shallow depressions on the disk, the hinder one small and just in front of the scutellum, and another large, shallow depression at each side; the thickened edges with an irregular row of rather strong punctures which in places slightly nick the sides: elytra strongly punctured, the punctures large, not close, and vanishing before the apex; a slight depression at each side the base in front of the shoulder (which is prominent), another at each side the suture behind the scutellum, and others larger, but more ill-defined, down by the sides, and behind the shoulders: underside, legs and antennæ shining black, pilose, the hairs on the underside decumbent.

Long. $6\frac{1}{2}$ lin.; lat. elytr. $3\frac{1}{4}$ lin.

Hab.—Australia (Goulburn River, Victoria).

Decialma ? Pascoei, n. sp.

Differs from *D. tenuitarsis* (Pascoe, Ann. Nat. Hist. 1869, p. 291) in having the head (save the clypeus) coarsely, reticulately rugose-punctured; the scutellum, underside, legs, antennæ and tarsi of the same deep, shining black as the entire upper surface.

Long. $4\frac{1}{2}$ lin.; lat. elytr. $1\frac{7}{8}$ lin.

Hab.—Queensland.

I doubtfully refer this species to *Decialma*, because

joints 9—10 of the antennæ are fully as long—if not longer—as broad ; neither does it any better accord with Erichson's genus *Olisthæna.*

Mithippia Jansoni, n. sp.

This species differs from Pascoe's *aurita* (Ann. Mag. Nat. Hist. 1869, p. 293) in having the elytra covered with rounded punctures—more or less confluent by irregular transverse wrinkles—without the slightest trace of a regular linear arrangement, and by being entirely destitute of hairs.

Long. 4 lin. ; lat. elytr. $1\frac{1}{2}$ lin.

Hab.—Albany and Champion Bay, West Australia. Five examples.

Ctimene, n. g.

Mentum trapezoidal, very convex in the middle, narrowly flattened at each side ; *labium* broadly emarginate in front, last joint of its *palpi* oval, broadly truncate at apex, that of the *maxillaries* rather strongly securiform : *head* immersed in prothorax up to the eyes, broadly rounded in front : *antennary orbits* rather long and narrow, obliquely rounded at the sides, a little reflexed : *epistomal suture* strongly marked : *eyes* moderate, transverse, reniform, distant, the portion visible above rounded : *antennæ* moderate in length, pilose, much stouter outwardly from the 6th joint; 3 as long as 4—5 together ; 7—10 obconic, gradually wider ; 9—10 a little wider than long ; 11 large, rounded at apex : *prothorax* transverse, moderately and regularly convex, arcuate-emarginate in front, front angles not at all prominent ; sides finely margined, slightly and curvedly narrowed from base to apex ; base broadly lobed in the middle, and subtruncate in front of the scutellum : *scutellum* rather large, triangular : *elytra* elongate, subcylindric, the greatest convexity behind the middle, broader at base than base of prothorax ; sides strongly margined, reflexed and canaliculate ; *epipleural fold* somewhat abruptly terminated at the 4th ventral suture : *prosternum* a little produced in front, compressed but not carinate, the process horizontal, produced and triangulate behind, the end slightly upturned : *mesosternum* rather short, vertical in front, and triangularly cleft nearly to the base : *intercoxal process* somewhat narrowly oval : *legs* short ; femora thickened ; tibiæ a little thickened outwardly ; tarsi pilose beneath, first joint of the posterior longer than the two fol-

lowing united: *body* elongate-oval, moderately convex, without hairs.

The genera of this subfamily are now becoming very numerous, especially having regard to the small number of the species. I can see no help for it. The present genus possesses a combination of characters, and a facies, that will not allow of its being included in any of the previously described genera.

Ctimene Breweri, n. sp.

Elongate-oval; entirely of a deep, rich brown, glossy: head and prothorax finely, regularly, and somewhat closely punctured, an obscure fovea on the latter at each side the basal lobe; scutellum finely punctured; elytra somewhat closely, but irregularly rugose-punctate, the punctures much larger than those on the head and prothorax; underside and legs glossy brown, antennæ paler.

Long. $4\frac{1}{3}$ lin.; lat. elytr. $1\frac{5}{6}$ lin.

Hab.—Albany, W. Australia. Two examples captured by Mr. Brewer.

Note. — *Cyphaleus chalybeipennis*, Macleay, = *C. Mastersii*, Pascoe.

AMPHIDORIDES.

Ectyche scabripennis*, n. sp.

Oblong, black, slightly shining; body above and legs rather densely clothed with long, erect, black hairs: head and thorax densely cellulose-punctate, the punctures moderate, mostly a little oblong; prothorax transverse, convex, very feebly emarginate in front, sides regularly and rather strongly rounded, emargination of hind angles rather slight, without a tooth in the centre; elytra subdepressed, truncate at base, shoulders slightly obliquely truncated, the humeral angle slightly dentiform; each with nine shallow punctured grooves, the punctures rather large, slightly oblong, approximate; the intervals rough with rather close set, strongly depressed tubercles, each having a rounded puncture at their apex behind, or, in other words, coarsely muricate-punctate: tibiæ normal; underside, legs, and antennæ dark brown; palpi red; breasts hairy; flanks of prothorax longitudinally undulate-plicate: meso- and meta-thoracic parapleures, and epipleural fold, very coarsely punctured: antennæ long, filiform, strongly perfoliate; 3rd

* Pascoe, Ann. Mag. Nat. Hist., January, 1869, p. 143.

joint longest, 4—10 gradually a little shorter, subpyriform (8 to 10 subglobular), 11 not larger than 10, rounded.

Long. 4 lin.

Hab.—Nicol Bay (W. Australia). A single example captured by M. Duboulay.

This species would seem, from description and figure, to approach *E. erebea*, Pascoe: but it is twice as large, and the elytral sculpture is different.

Ectyche sculpturata, n. sp.

Oblong-oval, black, opaque; relatively broader, more depressed, and much more sparsely clothed above with hairs than the preceding: prothorax transverse, scarcely convex, sometimes faintly depressed down the median line, feebly emarginate in front, sides moderately rounded, emargination of hind angles strong, and with an acute tooth at the centre; finely and densely (as well as the head) cellulose-punctate, the punctures much smaller and more rounded than in the preceding: elytra truncate at base, shoulders rounded, humeral angle not at all dentiform, seriate-punctate, the punctures rather large, round, approximate; intervals flat, at *bottom* minutely intricately rugulose, studded with very small, flattened tubercles, each having a small rounded puncture at their apex behind, the sutural and each alternate interval appearing brighter (less opaque) than the others: tibiæ normal: underside, legs, antennæ, and palpi, pitchy-brown, shining; flanks of prothorax rather closely reticulate-plicate; breasts sparsely pilose; antennæ rather long, stouter and depressed outwardly, strongly perfoliate; joints 8—10 decidedly larger and broader, and a little rounded; 11 larger and longer than 10, strongly compressed, sides subparallel, apex slightly obliquely truncated.

Long. 3 to $3\frac{1}{4}$ lin.

Hab.—Nicol Bay. Two examples by M. Duboulay.

Ectyche tuberculipennis, n. sp.

Oblong-ovate, black, subopaque, pilose: head and prothorax punctured as in the preceding, but somewhat more confusedly so; prothorax relatively narrower, much more convex, scarcely emarginate in front, sides well rounded, emargination of hind angles less deep, and the central tooth less acute, than in the preceding: elytra slightly shining, base truncate, shoulders rounded, seriate-punctate,

intervals flat, sparsely and finely muricate-punctate, each with a row of conical tubercles, which become much larger and closer at the sides and apex, each tubercle with a rounded puncture at apex; the sutural and each alternate interval more shining than the others: apex of the tibiæ not appearing produced within, their inner edge straight throughout, outer edge of the anterior tibiæ feebly spined: underside, legs and antennæ pitchy-brown, palpi—and sometimes the tibiæ—dull red: flanks of prothorax finely reticulately plicate: breasts hairy: antennæ moderately perfoliate, thicker and slightly depressed outwardly; joints 8—10 rounded; 11 larger than 10, ovoid.

Long. $2\frac{3}{4}$ lin.

Hab.—Champion Bay (W. Australia). Three examples by M. Duboulay.

Micrectyche, n. g.

Antennæ short, compact, not perfoliate; joint 3 ordinarily larger than 4; 4—7 subequal—or very gradually a little shorter and wider—obconic; 8—10 stouter, gradually transverse, subtriangulate; 11 large, briefly oval, or globular: *epistomal suture* obsolete: *prothorax* with a more or less distinct flattened margin, usually feebly crenulate at the edges; emargination of the basal angle generally very strong, and with a prominent, acute tooth in the centre; or, it may be said, there is a more or less deep, rounded excision in front of the hind angle, the angle itself being acutely dentiform, and the margin behind leading a little sinuously to the base, which is more or less broadly rounded: *humeral angles of elytra* more or less strongly dentiform: *tibiæ* short, straight (except in *intermedia*), robust; the anterior triangular, their inner edge ordinarily straight throughout, their outer edge (except in *intermedia*) unspined, their apex not obliquely truncated, but produced *outwardly* into a strong, bifid tooth: *prosternum* not abruptly elevated; *mesosternum* strongly declivous in front. Species of small size, rather robust, pilose.

Very near *Ectyche*, but distinct by the characters indicated, and by the form of the *antennæ* especially. It is probable the *Ectyche? nana*, Pascoe, may belong to this genus.

As regards the three species, and one supposed variety, of this genus, described below, they are sufficiently close

to each other to make it possible that a large series of specimens, and the discovery of the sexual characters, would reduce them to two species, by the linking of *ferruginea* and its supposed var. to *intermedia* as a sex.

In *M. intermedia* there is a decided leaning towards *Ectyche* in the form of the pro- and meso-tibiæ. We have previously seen that the tibiæ are not of the normal form in *Ectyche tuberculipennis*. The dentate humeral angle, which is strong in all the species of the present genus, is also met with (though in a feebler form) in *Ectyche scabripennis*. As I have previously observed, the *essential* character of the present genus resides in the antennæ.

The species of both genera have the head and prothorax closely, and more or less confluently, cellulose-punctate, and these punctures (if they can be called such) are, in the present genus, distinctly ocellate, or have their centre occupied by an impressed point, from which arises a hair. I have used the term cellulose-punctate in contradistinction to that (and the most common) style of punctuation, which consists of impressed points on a more or less plane surface; such distinction of terms has long been wanted.

Micrectyche intermedia, n. sp.

Oblong-ovate, pitchy, anterior border of head ferruginous, the rest, and the prothorax, pitchy-ferruginous; pilose, the hairs much longest at the sides; moderately convex: prothorax a little wider than long, convex, faintly emarginate in front, sides moderately rounded, the margins distinctly expanded, flattened, of a clear ferruginous; the prebasal emargination strong, semicircular; base strongly rounded: elytra a little shining, humeral angle less strongly dentiform than in any of the following; seriate-punctate; intervals punctured, the punctures a little muricate and transversely confluent, the sutural intervals smoother and more shining than the others: legs and antennæ ferruginous; 3rd joint of the latter scarcely longer than the 4th, the last joint briefly oval: pro- and meso-tibiæ slightly bowed, their apex appearing produced within: pro-tibiæ irregularly spinose at outer edge, the apex slightly obliquely truncate, the outer apical angle subdentiform.

Long. $1\frac{1}{2}$ lin.

Hab. — Champion Bay. One example by M. Duboulay.

Micrectyche ferruginea, n. sp.

Oblong-ovate; pilose; dull ferruginous; prothorax clouded with black marks; elytra a little shining: much more robust than the preceding; prothorax broader, the lateral margins less distinctly expanded, and feebly crenulate at the edges, the prebasal emargination feebler and shallower, the base more gradually and less strongly rounded; elytra broader and shorter, more massive; humeral angle strongly dentiform, intervals wider, the punctuation better defined, less muricate, less transversely confluent, the sutural intervals much less evidently smoother and brighter; legs and antennæ more robust, pale ferruginous, shining; 3rd joint of antennæ decidedly longer than the 4th, the 11th subglobose: tibiæ short, straight, triangular; the anterior not spinose at outer edge; inner edge straight throughout; outer apical angle produced into a strong bifid tooth.

Long. $1\frac{3}{4}$ lin.

Hab.—Swan River. Two examples.

Var. ? *dubia.*—Smaller and much less robust: prothorax not clouded with black marks: disk of elytra clouded with fuscous; the punctures in line larger, the intervals more coarsely sculptured: prosternum between the coxæ a little broader and longitudinally concave.

Long. $1\frac{1}{2}$ lin.

Hab.—Champion Bay. One example.

The general form of this var.? is more like that of *M. intermedia*, but the tibiæ are differently formed; the 3rd joint of the antennæ is decidedly longer than the 4th, the lateral margins of prothorax are much less distinctly expanded, the base less strongly and more gradually rounded, and the colour is entirely dull ferruginous; in all these respects it agrees more closely with *M. ferruginea*.

A knowledge of the sexual character would determine to which, if to either, this var.? belongs, and also whether both it and *M. ferruginea* are really and specifically distinct from *intermedia;* at present I am compelled to hold them so.

Micrectyche Ryei, n. sp.

Elongate-oval, slightly depressed; pilose; dilute pitchy-ferruginous; prothorax clouded with black marks, less convex, and less strongly rounded at the sides posteriorly, than in the preceding; the lateral expanded margin feeble, the prebasal emargination lunate, the base slightly and

gradually rounded: elytra more elongate, less convex, less robust, the rows of punctures larger, more distinct, the punctuation on the intervals less confused, than in the preceding: legs and antennæ ferruginous; 3rd joint of the latter much longer than the 4th; the 11th subglobose.

Long. 2 lin.

Hab.—Champion Bay. Two examples by M. Duboulay.

By its more elongate, more parallel and less convex form, and somewhat differently formed prothorax, I have no doubt as to this being specifically distinct from all the preceding.

ADELIIDES.

Adelium (*Seirotrana*) *strigipenne*, n. sp.

Oblong-oval, flattish above, black, shining; sparsely and indistinctly—save on the head—pubescent: head coarsely and reticulately rugose-punctate, the punctures oblong, front not excavated; 3rd joint of antennæ a little shorter than 3—4 united; antennary orbits rounded (not angulate) at the sides; prothorax transverse, the anterior angles less acute than in *catenulatum*, and directed towards the lateral margins of the head; the sides much less strongly incurved behind the middle—the base is consequently considerably wider than the apex, the margins toothed only from the middle to the base, the punctuation is more confluent, the punctures often very elongate; median dorsal furrow faintly marked, the fovea at each side the disk much fainter, the median basal one obsolete: scutellum smooth: elytra subparallel to two-thirds their length, shoulders narrowly rounded; each elytron with 10 narrow, feebly elevated, slightly waved (both laterally and vertically) costæ, which are crenately punctured at each side, and often also (especially the sutural) at top; the intervals are very feebly bicostate, or trisulcate, the inner sulcus the most marked, and frequently interrupted by the confluence of the two secondary (or intermediate) costæ, which are also waved like the primary costæ; when viewed from above the elytra appear to be irregularly transversely tuberculate; when viewed from the side they have a finely rippled appearance: underside, legs, and antennæ, black.

Long. $5\frac{1}{2}$ lin.; lat. elytr. $2\frac{2}{5}$ lin.

Hab.—"Australia." One example.

Very distinct from all the described species of this section of the genus by the peculiar sculpture of the elytra, which almost defies description.

Adelium nigroæneum, sp. n.

Oval, subdepressed, black slightly bronzed, very glossy: head rugosely punctured: prothorax ample, convex, regularly rounded at the sides, which are slightly expanded and rather strongly margined; front arcuate-emarginate; base closely applied to base of elytra, rather strongly trisinuate, distinctly bilobed in the middle; hind angles slightly rounded, a little outwardly directed; median dorsal furrow well marked at base, absent at apex; somewhat finely and irregularly punctured and rugose; a distinct oblong impression at each side near the middle of the margin, and another impression at each side the base at the outer sinus: elytra subdepressed, scarcely wider at base than base of prothorax; sides gradually narrowed from before the middle to the apex; each elytron with 9 well-marked striæ, which are minutely and indistinctly punctured; intervals smooth, impunctate, subconvex (especially at sides and apex); the 4th and 8th shortest, exclosed by the 3rd and 5th and 7th and 9th; the 3rd and 7th extend to—and unite at—the margin, just before the apex; epipleural fold normal: underside and legs bronze-black, shining; the former almost impunctate; the latter rather robust, feebly punctured, sparsely pilose: antennæ stout, very gradually thicker outwardly; 3rd joint as long as 3—4 united; last joint elongate, ovoid: prosternal process horizontal, strongly and acutely produced behind: mesosternum prominent, broadly concave throughout its length: intercoxal process very wide; apex squarely truncated: last joint of antennæ, and the tarsi, fulvous.

Long. $3\frac{1}{3}$ lin.; lat. elytr. $1\frac{3}{5}$ lin.

Hab.—New Caledonia. One example.

By the form of the prosternal process, mesosternum, and the trisinuate base of prothorax, the present species will form the type of a new section of the genus. The prothorax is disproportionately large. It might well be the *Adelium exul* of Montrouzier; but he gives eight striæ only to each elytron, the intervals as slightly rugose, and the legs as "presque grêles."

Adelium Fairmairei, n. sp.

♂?.—Oblong-oval, depressed, dark bronzy-brown, shining: head and prothorax irregularly punctured and indistinctly foveolate and rugulose: prothorax wider than long, depressed, arcuate-emarginate in front, and slightly com-

pressed at each side the middle; sides finely margined, well rounded to behind the middle, thence a little sinuously contracted to the hind angles, which are slightly obtuse; base closely applied to base of elytra, faintly emarginate in the middle; median dorsal furrow indistinct; scutellum broadly triangular: elytra depressed, sides gradually narrowed from before the middle to the apex; irregularly, and more or less interruptedly, punctate-striate; intervals flat—except the two on the epipleura, which are convex—finely and not closely punctured, feebly and irregularly rugulose; epipleural fold normal, and, together with the underside, black, almost impunctate: legs moderately robust, reddish-brown, femora at base, and anterior tibiæ at apex, broadly black or fuscous: antennæ robust, slightly thicker outwardly; joint 3 scarcely as long as 4—5 united, 11 largest of all, obliquely ovate: prosternal process horizontal, a little produced behind, terminating in a slightly reflexed point; mesosternum declivous and broadly concave in front; intercoxal process wide, the apex squarely truncated.

Long. $3\frac{1}{8}$ lin.; lat. elytr. $1\frac{1}{3}$ lin.

♀?.—A little larger and broader; punctuation, &c. on prothorax stronger; elytra narrowed from behind the middle to the apex, the striæ less distinctly punctured; intervals on the epipleura less strongly convex.

Long. $3\frac{1}{2}$ lin.; lat. elytr. $1\frac{1}{2}$ lin.

Hab.—New Caledonia. Two examples.

Adelium marginatum, n. sp.

♂?.—Elongate-oval, depressed, bronzed brown, with a patch at each side the disk of prothorax, and the elytra at base and down by each side near the margin, darker, shining; the margins of elytra and epipleura much paler: head and prothorax somewhat strongly and closely rugose-punctate; the latter irregularly depressed down the median line, a well-marked impression at each side the middle at the base, apex slightly sinuously emarginate, sides finely margined, moderately rounded to behind the middle, thence somewhat sinuously narrowed to the hind angles, which are obtuse; base closely applied to the base of the elytra, narrowly emarginate in the middle; scutellum transversely triangular: elytra depressed, gradually narrowed from before the middle to the apex; punctate-striate, intervals

flat—save the one marking off the epipleura, which is subcarinate—irregularly confluently punctured, longitudinally rugose, the punctures and the rugosities together having somewhat of a chain-like appearance when viewed laterally and obliquely; the 4th interval is expanded near the base and has thereon an impressed elongate-oval ring; the sides and apical half of the elytra are also irregularly, undulately elevated and depressed; epipleural fold and underside dark bronzy brown, finely rugose-punctate, lower edge of the former very strongly sinuous: legs testaceous; femora at base broadly dusky; tibiæ with a dusky ring beyond the middle: antennæ moderately stout, thickening outwardly; joint 3 not so long as 3—4 united; 11 very large, strongly obliquely ovoid; joints 1, 2 and 11, and the palpi, fulvous: prosternal process subhorizontal; intercoxal process slightly rounded at apex.

Long. $3\frac{1}{2}$ lin.; elytr. lat. $1\frac{2}{3}$ lin.

♀?.—A little smaller and more regularly oval; the entire surface markings distinctly feebler, the colour entirely bronzed brown, without any darker markings; the lateral margins of the elytra more broadly paler and the colour more dilute (approaching testaceous); the apex of the prothorax is simply emarginate, the front angles more depressed, the sides more strongly and more regularly rounded, the base more decidedly emarginate in the middle; the elytra narrowed from behind the middle to the apex, the epipleura less strongly marked off, and the tibiæ have not the dusky-black ring beyond the middle.

Long. 3 lin.; lat. elytr. $1\frac{1}{3}$ lin.

Hab.—New Caledonia.

Adelium externecostatum, n. sp.

♂?.—Elongate-oval, dark-coppery brown, slightly bronzed, and with a slight metallic bronzed purplish tinge on the prothorax: head and prothorax densely, coarsely, and confluently rugose-punctate, with some small irregular discal spaces smooth, irregularly foveate or unequal, median dorsal line indistinct; apex arcuate-emarginate; sides expanded and attenuate, very finely margined, the edges crenulated, regularly rounded; base closely applied to the base of the elytra, slightly but distinctly trisinuate, the inner sinus broad and shallow, the two outer slightly oblique, the hind angles slightly overlapping the shoulders of the elytra; scutellum transversely triangular: elytra subde-

pressed, striated or grooved, the striæ much broader and deeper at sides, more or less interrupted (strongly so at sides and at apex) by transverse, elevated lines, which sometimes cross two or more intervals, at others shorter, and somewhat tuberculiform ; intervals convex, punctured, the interval marking off the epipleura narrow, compressed, costiform ; sides gradually narrowed from before the middle to the apex: epipleural fold faintly rugose-punctate from behind the shoulders to the apex, strongly sinuous at the lower margin, and—together with the underside, and the femora beneath—dark brown; legs and abdomen finely punctured, the former pubescent; intercoxal process wide, truncate at apex ; prosternal process and mesosternum as in *A. Fairmairei ;* legs moderate, femora above, and tibiæ dusky reddish-brown, tarsi a little paler ; antennæ moderately stout, gradually thickened outwardly, joint 3 as long as 4—5 united ; 11 largest, a little obliquely ovoid, 1, 2. and 11 rufescent.

Long. $3\frac{1}{3}$ lin. ; lat. elytr. $1\frac{2}{5}$ lin.

♀?—Larger and more robust, colour darker, more obscure, subopaque ; prothorax less distinctly attenuate at margins, the edges not distinctly crenulated, the sides more or less parallel at the hind angles, the base still more feebly trisinuate, the smooth discal spaces more distinct; the elytra are of the same form, but the longitudinal furrows are less strongly interrupted, and the sutural interval appears a little smoother ; legs darker and more robust.

Long. 4 to $4\frac{1}{3}$ lin. ; lat. elytr. $1\frac{2}{3}$ to $1\frac{3}{4}$ lin.

Hab.—New Caledonia. Three examples (1 ♂, 2 ♀).

Dystalica subpubescens*, n. sp.

Of a similar form, colour, &c. to *D. homogenea,* Pasc., but smaller, the head and prothorax less densely, and not nearly so coarsely, rugose-punctate ; the latter also more regularly rounded at the sides, the lateral margins finely reflexed, but not at all crenate ; the striæ of the elytra less strongly and less coarsely rugose-punctured, or crenated, the intervals a little narrower, and, especially at the sides, more sharply convex or careniform.

In both species the intervals of the elytra are sparsely but rather coarsely punctured, and have, at their apex, a short row of small, conical, black tubercles; the entire sur-

* Pascoe, Ann. and Mag. of Nat. Hist., January, 1869, p. 142.

face is sparsely clothed with rather long, decumbent, cinereous hairs, and the last joint of the antennæ is elongate-oval and larger and longer than the 10th.

Long. 6½ lin.

Hab.—I have received two examples of this species from Paris, as coming from New South Wales.

MISOLAMPIDES.

Metisopus, n. g.

Mentum trapezoidal, convex, unicarinate: *head* deeply immersed in prothorax, not—or but little—inclined, trapeziform in front: *epistoma* elongate, completely hiding the labrum, the apex feebly emarginate, the angles rounded: joint 3 of *antennæ* but little longer than 4, 7—10 gradually transverse (but much less strongly so than in *Isopus*), 11 large, subovoid: *prothorax* subquadrate, very moderately convex, sides subparallel, incurved at apex, rather strongly margined and a little canaliculate within, apex feebly emarginate, front angles not produced, narrowly rounded; base rounded in the middle, hind angles somewhat obtuse, nearly forming right angles: *scutellum* minute, triangular: *elytra* suboval, produced at apex, moderately convex, scarcely wider—and subsinuously emarginate—at base than base of prothorax, strongly margined at the sides, reflexed, and canaliculate within: *prosternum* not bulged out from the anterior border, a little compressed immediately in front of the coxæ, the *process* horizontal, produced and lanceolate behind, longitudinally concave: *mesosternum* moderately wide, vertical—and broadly, deeply and triangularly emarginate—in front, base squarely truncated: *metasternum* between the coxæ not equalling in length the 2nd ventral segment: *intercoxal process* moderately wide, oval: *legs* longer than in *Isopus;* 1st joint of hind tarsi a little longer than the two following united: *body* oblong-oval.

Near *Isopus,* but at once to be distinguished by the form oblong-oval, and much less convex; the subquadrate prothorax feebly emarginate in front, the apical angles not prominent; the presence of a scutellum; the different prosternum; the narrower, oval intercoxal process, &c.

From *Pseudhelops* it may be known by the longer head (especially the epistoma), the concealed labrum; the more strongly expanded and depressed outer joints of the antennæ; the differently formed prothorax—the sides

more strongly margined; the prosternal process produced and lanceolate behind, &c.

Metisopus purpureipennis, n. sp.

Oblong-oval, moderately convex; head—save the anterior margin, which is reddish-brown — black, finely and not closely punctured; prothorax glossy black, finely punctured, a small foveate depression—more or less marked—at each side the middle at the base; elytra deep purple, the suture reflecting metallic green, glossy; each elytron with eight—besides a short scutellar row—punctured striæ, obsolete at apex; intervals subconvex, minutely and sparsely punctulate, the 7th compressed and costiform from behind the middle to the apex; underside, legs and antennæ dark chestnut-brown, shining.

Long. $4\frac{1}{2}$ lin.; lat. elytr. 2 to $2\frac{1}{5}$ lin.

Hab.—Norfolk Island. Two examples.

In one of these examples the prothorax is distinctly longer, and the elytra broader, than in the other,—possibly sexual differences.

Chlorocamma, n. g.

This genus is near to *Isopus: mentum* convex and tricarinate in the middle: *head* deeply immersed in prothorax, inclined, labrum nearly entirely concealed, epistomal suture well marked: *prothorax* convex, sides finely margined, gradually curvedly narrowed from base to apex; apex arcuate-emarginate, front angles not produced; base distinctly bisinuate: *scutellum* triangular, very distinct, much larger than in *Metisopus* or *Episopus: elytra* more or less strongly narrowed from about the middle to the apex, which is a little produced and narrowly rounded; *prosternum* a little convex—but scarcely compressed—before the coxæ; the *process* horizontal, produced and pointed behind, more or less strongly longitudinally concave or excavated: *mesosternum* subvertical in front and broadly and deeply excavated to the base: *metasternum* between the coxæ not equalling in length the 2nd ventral segment: *intercoxal process* somewhat narrowly oval: *legs* short, robust, tibiæ nearly straight; 1st joint of hind tarsi as long as the two following united: *antennæ* as in *Isopus: body* oval, or oblong-oval (according to sex?); the alternate

intervals of the elytra strongly compressed—carinate—behind.

The *Neomida sulcata* (elongata), Montrouzier (sec. Coll. Doué), will enter into this genus.

Chlorocamma carenipennis, n. sp.

Larger than *Sulcata*, Montr.: head black, epistoma more closely punctured, front densely, reticulately rugose-punctate; prothorax greenish-black and moderately shining—or metallic—green, with pale purplish reflections, and more or less closely punctured, according to the sex?: scutellum shining black; elytra deeply striated, or sulcated, the striæ distinctly punctured at bottom; intervals distinctly punctured, convex—strongly so at sides and apex; the 3rd, 5th and 7th are most strongly and distinctly carinate behind; the 3rd curves inwards to the extreme apex and encloses the 1st and 2nd; the 5th and 7th unite behind, and enclose the 6th; sometimes the 4th and 7th and 5th and 6th appear to be united in pairs behind; the colour is of a dark green, shining, the base and suture purple; underside deep shining black, with slight metallic reflections on the metasternum and abdomen; flanks of prothorax more or less coarsely—but not closely—rugose-punctate; pro- and meso-sterna, prosternal process, and base of metasternum, coarsely and closely rugose-punctate; underside deep shining black; legs pitchy; antennæ, palpi and tarsi ferruginous.

Long. $4\frac{1}{4}$ lin.; lat. elytr. $1\frac{3}{4}$ to $1\frac{4}{5}$ lin.

Hab.—New Caledonia. Two examples.

In both the present species and in *C. sulcata* the form that I take to be the ♀ is more broadly oval; the prothorax distinctly wider, more brightly coloured, and more finely and sparsely punctured.

The present species may at once be distinguished from *sulcata* by the larger size, and the head densely and reticulately rugose-punctate on the front.

Episopus, n. g.

Very near to *Isopus*, but of a more regularly oval and much less convex form; legs a little shorter and stouter, tibiæ more thickened outwardly and more compressed; eyes smaller; scutellum small but very distinct, triangular;

prothorax and elytra more strongly margined at the sides; prosternum less compressed in front, the process broadly rounded behind, convex throughout.

The presence of a scutellum, and the convex prosternal process will serve at once to distinguish this genus from *Isopus*.

The *Isopus convexus*, Montrouzier, will enter into this genus; the species are not unlike, in form and appearance, to some of the shining-black species of *Colymbetes*.

Episopus politus, n. sp.

Larger than *E. convexus*, Montr., moderately convex, entirely—including legs (except the coxæ, which are dark chestnut) and antennæ—of a deep shining black: head moderately punctured, slightly rugose near the eyes; prothorax minutely and sparsely punctulate, the anterior angles somewhat produced, acute, directed forwards: scutellum very small, triangular, smooth; elytra feebly seriate-punctate, obsoletely so at sides and apex; intervals very minutely and sparsely punctulate, the 7th costiform at the apex.

Long. $5\frac{1}{4}$ lin.; lat. elytr. $2\frac{2}{3}$ lin.

Hab.—New Caledonia. One example.

Distinct from *E. convexus* by the larger size, more prominent anterior angles of prothorax, black antennæ, and smoother intervals of elytra: in *E. convexus* the intervals—or rather the whole ground surface—are subcoriaceous.

Isopus.

Montrouz. Ann. France, 1860, p. 299.

The very brief and unsatisfactory exposition of this genus given by Montrouzier (which might well apply to a hundred other genera) has determined me to give a detailed description: the possession of typical examples of the genus out of the Collection Doué enables me to do this, whilst a further supply of specimens from New Caledonia has also enabled me to add several new species. The position of the genus is undoubtedly with the 1st section of the *Misolampides* of Lacordaire,* and it must be placed immediately after my genus *Episopus*, this latter having—

* Gemminger and V. Harold in their Catalogue have placed it—haphazard—with the *Strongyliides*.

in common with *Chlorocamma*, *Metisopus* and *Pseudhelops* —a scutellum.

Mentum trapeziform, sides in front inflexed, middle portion prominent, tricarinate, the two lateral carinæ oblique: *mandibles* bifid at apex: last joint *labial palpi* subcylindric, the apex broadly truncated; that of the *maxillaries* securiform: *head* inclined, rather deeply immersed in the prothorax, usually trapezoidal in front; the epistoma long—nearly entirely concealing the labrum—apex broadly but not deeply emarginate, the angles sometimes depressed and rounded, in which case the head appears broadly rounded in front: vertex convex; epistomal suture more or less distinct: *eyes* moderate, or rather small, emarginate in front, transverse, more prominent laterally than the sides of the antennary orbits: *antennæ* rather short, joint 3 elongate, 7—10 gradually transverse, 11 large, rounded at apex: *prothorax* more or less strongly transverse, sides finely margined, ordinarily gradually, and slightly curvedly, narrowed from base to apex; apex strongly emarginate, anterior angles more or less produced, acute, usually directed forwards, base feebly sinuous, more prominent at the middle than the angles: *scutellum* nil: *elytra* usually very convex, the greatest convexity before the middle, more or less strongly narrowed behind, the apex produced and narrowly rounded; base slightly sinuate-truncate, and slightly broader than base of prothorax, to which it is closely applied: *epipleural fold* broad, more or less abruptly terminated before the apex: *prosternum* bulged out in the middle and very convex, compressed (the head consequently fits rather loosely in the cavity); the process very broad, robust, horizontal, strongly concave above, produced behind, the end broadly triangulate or rounded: *mesosternum* more or less prominent, broad, horizontal, vertical in front, and broadly and more or less angularly and deeply emarginated for the reception of the prosternal process, the base usually strongly arcuate-emarginate: *metasternum* between the coxæ as long as (sometimes a little longer) the 2nd ventral segment: *intercoxal process* very wide, the apex broadly, and somewhat sinuously, rounded, or triangulate: *legs* rather short and robust, anterior coxæ globular, femora thickened in the middle, compressed; tibiæ a little arched, slightly thickened outwardly: 1st joint of hind tarsi as long as the two following united, the last long in all: *body* very convex, more or less briefly oval, and attenuate at hind extremity.

The *Isopus convexus*, Montrouz., having a scutellum, belongs to a distinct genus, as we have previously indicated.

Isopus Blanchardi, Montrouz., l. c. p. 299 (sec. Coll. Doué).

An example of this species obtained from the Coll. Doué agrees tolerably well with the rather queer description given by Montrouzier. The form is somewhat briefly oval, shining, head and prothorax olive-green, epistoma and vertex closely punctured, front coarsely and closely rugose-punctured: epistomal suture distinct: prothorax somewhat finely and regularly, but not closely, punctured, transverse, wider at base than at apex, sides a little rounded at the middle, curvedly contracted—most strongly at apex—at base and apex, front angles acutely produced and outwardly directed: elytra very convex, of a beautiful purplish-violet, the suture broadly greenish, feebly rounded at the sides to beyond the middle, thence narrowed to the apex, which is produced and narrowly rounded; base slightly sinuously emarginate, decidedly wider than base of prothorax; on each elytron eight faint—save at the sides—punctured striæ, the punctures small and distant at the sides and apex, intervals finely and not closely punctured, flat except the 7th, 8th and 9th, which are feebly costiform (the 7th most distinctly so) from near the apex: prosternal process broadly rounded behind: mesosternum short, but little prominent, broadly excavated nearly to the base: underside and legs shining black, with a greenish tinge; antennæ and palpi pitchy: intercoxal process moderately wide, broadly and slightly sinuously rounded at apex.

Long. $4\frac{3}{4}$ lin.; lat. elytr. 2 lin.

Hab.—New Caledonia.

Isopus robustus, n. sp.

Very briefly oval, shining, head and prothorax shining black, the former coarsely and closely rugose-punctate on the front; the latter very convex, the sides gradually narrowing in a slight curve from base to apex; apex strongly emarginate, front angles acutely produced and directed forwards, disk foveate-punctate, sides and apex very finely punctured: elytra scarcely wider at base than base of prothorax, sides more or less gradually narrowed from the middle, the apex produced and narrowly rounded,

bronzy-green with the base violet, or purplish-violet, and the suture more or less broadly dark green, punctate-striate, the striæ very faint even at the sides, the punctures minute at the sides, obsolete at the apex; intervals minutely punctulate, flat, the 7th only feebly convex at the extreme apex: underside and legs shining pitchy-black, palpi and antennæ dark chestnut-red: prosternal process broadly triangulate behind: mesosternum very prominent, broadly and somewhat angularly notched in front, and produced at each side: intercoxal process wide, apex very broadly triangulate.

Long. $4\frac{1}{3}$ to $4\frac{1}{2}$ lin.; lat. elytr. $2\frac{1}{2}$ to $2\frac{3}{5}$ lin.

Hab.—New Caledonia. Three examples.

Var. Smaller. Long. $3\frac{1}{4}$ to $3\frac{1}{2}$ lin. Disk of prothorax slightly rugulose.

Hab.—New Caledonia. Two examples.

This species is easily to be distinguished from all the others by the disk of the prothorax foveate-punctate. I have received it from Paris, and have also examples out of the Coll. Doué, as the *I. convexus*, Montrouz., but this is manifestly wrong, his description clearly gives the whole surface of a brilliant black, and as having a scutellum.

Isopus Allardi, n. sp.

Briefly oval, shining, head and prothorax dark olive green, elytra purplish-violet with slight greenish reflections, the basal half of the suture green: head above entirely finely and not closely punctured: prothorax moderately convex, feebly depressed at the middle of the base, sides gradually, and scarcely curvedly, narrowed from base to apex, apex strongly emarginate, the angles acutely produced and directed forwards; moderately punctured on the disk, the punctures near the base a little larger (but by no means foveate) and more scattered, those on the sides very minute: elytra very convex, but more gradually declivous behind than in those preceding, but little wider at base than base of prothorax, sides gradually narrowed from before the middle to the apex, which is strongly produced and very narrowly rounded; punctate-striate, the striæ more distinct than in *robustus;* the 7th, 8th and 9th intervals as in *Blanchardi:* underside and legs very glossy, pitchy-black with a slight greenish tinge on the metasternum and abdomen: coxæ and palpi glossy light chestnut-red, basal joints of antennæ and tarsi a little darker:

prosternal process and mesosternum as in *robustus:* intercoxal process very wide, the apex distinctly broadly triangulate.

Long. 4 lin.; lat. elytr. $2\frac{1}{4}$ lin.

Hab.—New Caledonia. One example.

Distinct from *Blanchardi* by the form of prothorax, &c., and from *robustus* by the punctuation on the disk of prothorax not foveate, &c.

Isopus cyaneus, n. sp.

Somewhat briefly oval, shining, cyaneous with a slight violet tinge, the prothorax a little lighter: head and prothorax finely punctured, the epistoma and sides of the latter minutely so; epistomal suture distinctly marked and somewhat angulate at each side: prothorax relatively wider and shorter than in those preceding, sides slightly curvedly narrowed from base to apex, the anterior angles scarcely so strongly and acutely produced as in those preceding, and directed towards the lateral margins of the head, very distinctly depressed at the middle of the base: elytra of the same form as in *Allardi*, but still more gradually declivous behind, the apex scarcely so strongly produced and a little more broadly rounded, the punctuation of the striæ stronger than in those preceding, especially at the apex, where it is the strongest: intervals indistinctly punctulate, the whole of them more or less convex at the apex; the 9th is costate from near the shoulder to its junction with the 8th, which is costate from before the middle to its junction with the 7th near the apex, and the 7th is strongly costate from the middle to the extreme apex of the elytra; underside blue with a greenish tinge on the metasternum and middle of abdomen, shining; prosternal process, mesosternum, and legs, shining black; the two former, and the intercoxal process, of same form as in *Allardi:* tarsi and basal joints of antennæ pitchy brown.

Long. $4\frac{1}{3}$ lin.; lat. elytr. $2\frac{1}{3}$ lin.

Hab.—New Caledonia. One example.

Easily to be separated from all the other species by the colour, the strongly punctured striæ at apex of elytra, and the outer intervals strongly compressed, costate.

Isopus caledonicus, n. sp.

Oval, a little less convex than any of the preceding: head and prothorax shining black: front slightly depressed,

somewhat closely, but not coarsely, rugose-punctate; epistoma and vertex minutely punctate: prothorax of same form as in *cyaneus*, the anterior angles a little less produced, disk somewhat sparsely punctured; the punctuation on the depressed basal portion sometimes obsolete, sides minutely and not closely punctulate: elytra blue-black, with faint violet reflections, decidedly less convex than in any preceding, the striæ nearly obsolete, the punctures distinct and well marked, except at the apex, where they are much smaller; intervals distinctly but sparsely punctulate, the 7th only distinctly convex from near the apex: underside and legs deep shining black; basal joints of the antennæ and of the tarsi dark chestnut, the palpi paler: prosternal process and mesosternum as in *cyaneus;* the intercoxal process relatively narrower, broadly triangulate at apex.

Long. $3\frac{3}{4}$ to 4 lin.; lat. elytr. $1\frac{4}{5}$ to 2 lin.

Hab.—New Caledonia. Two examples.

Isopus oxygaster, Montrouzier, l. c., p. 300 (sec. Coll. Doué).

I have grave doubts as to the wisdom of leaving this species in the genus *Isopus:* the form is globulous and exceedingly convex, the head and prothorax, and the elytra behind, being strongly and almost equally declivous, with the apex of the latter a little produced; the prothorax is strongly narrowed to the apex, where it rather closely embraces the sides of the head, the front angles are produced, acute and directed forwards; the head is faintly and distantly punctured, the epistomal suture distinctly marked; the prothorax is impunctate, smooth, the base broadly rounded; the elytra are not wider at base than the base of the prothorax, impunctate, the striæ being represented by faint lines or streaks, the position of the 7th interval is indicated by a costiform elevation at the apex; the prosternum is short, compressed and subcarinate in front, the process is very wide, bi-impressed, and broadly rounded behind; the mesosternum is wide, short, broadly and angularly cleft in front nearly to the base; the metasternum is rather long, being nearly twice as long between the coxæ as the 2nd ventral segment; the intercoxal process is very wide, the apex broadly and sinuously rounded; the head, prothorax, underside, and femora, are deep shining black, the elytra are shining black with

a faint greenish tinge; the antennæ (entirely), palpi, tarsi and coxæ are ferruginous, the tibiæ darker.

Long. $3\frac{1}{3}$ lin.; lat. elytr. $2\frac{1}{2}$ lin.

Hab.—New Caledonia. One example, obtained from the Collection of Doué.

Omolipus oblongus*, n. sp.

Elongate-oval, or subcylindric; above dark green with a chalybeate tinge, moderately shining, head and prothorax a little duller and darker: epistoma finely and rather closely punctured; head and prothorax almost impunctate, smooth; prothorax very convex, the middle of the anterior border produced (almost gibbous), front angles strongly bent down and totally invisible when viewed from above, the sides strongly rounded to the base, hind angles obscure: scutellum transversely triangular, finely punctured: elytra elongate, subcylindric, subparallel, gradually narrowed from near the apex, which is narrowly rounded; very finely striated, almost obsoletely so on the disk, the striæ sharply and rather distantly impressed with narrow, oblong punctures, much smaller and finer at the apex; intervals rather broad, flat, impunctate: underside dark green with chalybeate reflections, shining; abdomen minutely punctured; legs pitchy brown, rather closely punctured; antennæ paler.

Long. $6\frac{1}{2}$ lin.

Hab.—Champion Bay, W. Australia. A single example, captured by M. Duboulay.

Easily to be distinguished from all the other described species by the colour, and the subparallel elytra. From *O. cyaneus*, Pasc.—the only other species not entirely black—it is very distinct by its larger size, different colour, less metallic surface, and differently formed and sculptured elytra.

Omolipus parvus, n. sp.

Small, narrowly elongate-oval, shining black: head subvertical, finely and not closely (except on the epistoma) punctured; prothorax similar in form to the preceding species, but the middle of the anterior border is still more strongly produced, the anterior angles not quite so

* Pascoe, Journ. of Entom. i. p. 127.

strongly nor so widely depressed, the sides less strongly rounded and gradually narrowed from the middle to the hind angles, and the base is broadly rounded or lobated: scutellum triangular, pointed behind: elytra rather narrowly ovate, with rows of rather large, oblong, strongly impressed punctures; underside black, moderately shining; abdomen finely and rather closely punctured; legs glossy black; antennæ and tarsi dark chestnut-brown.

Long. $3\frac{1}{2}$ lin.

Hab.—Swan River, W. Australia. Two examples.

Judging from description, this species will be very near to *O. gnesioides*, Pasc.; but there appear to be sufficient differences—joined to the widely different locality—to constitute it a good species.

XV. *Notes on the* Ephemeridæ, *by* Dr. H. A. Hagen; *compiled* (*with remarks*) *by the* Rev. A. E. Eaton, M.A.

[Read 5th May, 1873.]

[Towards the middle of June, 1871, I received from Dr. Hagen, of Cambridge, Massachusetts, a series of letters relating to the *Ephemeridæ*. They contained much interesting matter, not only in the form of original observations, but also in the shape of criticisms and corrections of my *Monograph on the Ephemeridæ, Part I.*, which had been published at the end of the preceding March. They conveyed information also respecting works which I had not been able to collate.

The letters from which the notes subjoined are compiled are four or five in number. They consist, in a large measure, of transcripts from Dr. Hagen's note-book, and the writing of each of them was a day's work. From this some idea may be formed of their extent. They are of a strictly private character. Written off-hand, in haste, without revision by the author, and with no intention that they should be published, they were susceptible of some little condensation, but not of much. The conjecture of one day was sometimes verified in a subsequent letter, so that remarks bearing on the same insect are to be found in more than one place. These scattered remarks it was advisable to bring together, so as to place the writer's views before the reader in the most convenient form. In order further to facilitate the application to my Monograph of the criticisms in the letters, I have reduced their materials into an order corresponding in arrangement with my work, and have indicated the pages of the Monograph, in which will be found the passages touched upon in the Notes.

My own remarks are enclosed in vincula [ ]. Amongst them I have introduced corrections of errors of printing in the Monograph, which were not discovered in time to be inserted with the other corrigenda in the Transactions for 1871.—A. E. Eaton.]

Page 2. [Dr. Hagen states that Say's collection is destroyed.] Harris's collection [in the Museum at Cambridge, Massachusetts] is in very bad condition. It contains some *Ephemeridæ* named by Say himself, but none of those described by him [see Note to p. 8]. Walsh's collection is now in the Chicago Museum. I do not know whether anyone takes care of it. [Has it survived the fire?] I possess types of his species [see Note to pp. 13, 14.] Besides the Walsh types, my collection contains, with few exceptions, the types of only my Ceylon and American Synopsis, and these are in good condition [see Note to pp. 13, 14.] From Zetterstedt I possess only two types [see Notes to pp. 10 and 88]; from Burmeister one [see Notes to pp. 10 and 96.]

Page 3. 1552.—In Wotton, *De differentiis animalium*, &c., p. 193, is something about the occurrence of *Ephemera* on the river Hipparis. [Fiume di Camarana, Sicily. This work is not cited by Pictet.]

Page 3. 1680.—Blegny will be found in Banks' Library in *Bonnet's Zoodiacus medico Gallicus.*

Page 3. 1708.—[Ray in his *Methodus Insectorum* (1708) and *Historia Insectorum* (1710) described classes from the metamorphoses, and constructed orders from the number of the feet of insects. His Class II. Metamorphota, Order i., Larvis et pupis agilibus, would comprise the *Ephemeridæ.*]

Page 3. 1718 and 1723.—Baier and Kulmus are not important so far as I remember.

Pages 4 and 17. Linné in *Elenchus anim. per Suecica observata*, p. 78, gives three species of *Ephemera.* "1. Eph. alis maculatis, Swam. Tract. de Ephemera. 2. Eph. alis incrassato albis (bioculata). 3. Eph. alis albis minima (horaria)." Not a word more.

In *Miracula Insectorum* (Amœnit. iii.) he says, "Ephemera Fn. Suec. 754 (*E. horaria*) miraculosa videtur, quod tunica pupulæ deposita, perfecta per integrum diem vix vivet, quo brevissimo tempore spatio aere delectatur, nuptias celebrat, parturit, moriturque." So far as I know, nothing more is given by Linné.

Page 5. 1767.—In Pallas's own copy of Lin. S. N. xii. are the following notes in his handwriting. To *Eph. striata* is appended "*Eph. Sibirica* diptera triseta, setis villosis . . . . insecta minima a Laxmannio notavi. Dantur dipteræ plures species, *Pallas* Ephemera biseta corpore testaceo, thoracis dorsi pedibusque anticis nigris, quatuor reliquiis setisque albidis, alis quatuor hyalinis, collum subdistinctum, caput depressum, oculis lateralibus prominentibus. Ad Ubam Junio 1777 magnitudine media. Videtur esse *Eph. culiciformis*," with the citation of Geoffroy. To *E. lutea* with (?) he adds "lineolis longitudinalibus nigris. In Uralensis montibus aquis Junio copiose."

[Of these *E. Sibirica* is doubtless a *Cœnis;* the species referred to *E. culiciformis* is probably an *Heptagenia;* and to this last genus most likely belongs the subject of the appendix to *E. lutea.*]

Page 5. 1767.—O. F. Müller, in *Flora Friedrichsdalina*, p. 235, gives, as additions to his *Fauna Fried.*, the names only of *E. culiciformis, horaria* and *diptera.*

Page 5. [1771.—The fig. 13 may prove to be the gill of *L. marginata.*]

Page 6. [1776.—Mül. For *russula* read *rufula.*]

Page 7. 1794.—Seetzen gives some very interesting observations on the habits and life-history, from oviposition and egg upwards, of his *E. lutea*, which I believe is *P. virgo.* He is one of the real observers. I believe you will find Meyer's Mag. f. d. Thiergesch. in the British Museum.

Page 7. [1805.—*E. Swammerdiana* in the note should be printed in ordinary type.]

Page 7. [1814.—T. Gray. The Works of Thomas Gray, edited by T. J. Mathias, 4to. London, vol. ii., p. 572. The late J. C. Dale, Esq., drew my attention, in 1868 or 1869, to a version of the Linnæan diagnosis of the orders and genera of insects done into hexameter verse by the poet. It is only a fragment. *Ephemera* is disposed of thus:—

Caudâ setigerâ, erectis stat *Ephemera* pennis.]

Page 8. 1823–4.—Say. Harris's Collection contains specimens named in MS. by Say and himself. Eph. (Baetis) eurinus, Say, MS., Massachusetts, is *Hexagenia limbata* ♀; but the wing is yellow throughout, and the anterior femur yellow with only a little black spot outside at the tip. I received from Texas ♂ ♀ of a very similar, perhaps new, species; but I do not now find sure specific characters.

Baetis amœnicauda, Say, MS., Massachusetts, is *B. femorata*, Walsh ♀ im. Perhaps my old opinion that Walsh's species are not those of Say is right.

Baetis costalis, Har., MS., Maine, is *Hex. limbata* ♂.

Baetis maculipennis and maculata, Har., MS., Maine, are *E. decora*, Hag. ♂ ♀ subim. I am not quite sure about their identity with my *E. natata* or Walsh's *decora*.

Baetis reticulata, Har., MS., Massach. and Alabama, is ♀ subim., new to me.

Baetis terminalis, Har., MS., Maine, is *Leptophl. nebulosa* ♂.

Baetis bispinosa, Say, MS., Massachus., is *Leptophl. cupida*, subim.

Baetis descripticostata, Say, MS., Dublin, New Hampshire, is *B. undata* ♀.

Baetis tenella, Har., MS., Maine, is *Heptag. maculipennis*.

B. fuscicostata, confusa, irregularis, luteipennis and leuconeura, Say, MS., of his catalogues, are destroyed.

Page 8. 1825.—Hummel. Essais Entom. No. iv. p. 71, n. 12, *E. citrina*.

Page 10. 1839.—Burm. I possess *C. discolor* [type] in my collection.

Page 10. 1840.—Zet. I possess two types, *vespertina* and *bioculata*, from Zetterstedt.

Page 12. 1850.—In Verh. zool.-bot. Gesells. Wien, i. 106, *Baetis binoculatus* is quoted as living in the Adelsberg Cave.

Page 13. 1855.—Fuss, Bericht ueber Neuropt. Siebenbürgen. A list; probably names only.

Page 13. 1855.—Goodias in Zeits. f. wissensch. Zool. T. vii. Heft 1, p. 2, figures larva of *Ephemera*.

Pages 13, 14. 1858-9, 1861, 1863.—H. A. Hagen. My collection is only worked out in *Ephemera*, *Palingenia*, *Oligoneuria* and *Cænis*. The rest are scarcely at all studied. It is rather rich in European and North American species; but in those from other countries it is almost tabula rasa, containing only some isolated examples. Most of the specimens are old; some of them, fifty years or more of age, are not preserved so well as I should like; but you know that it is impossible to set old ones, they would not bear to be relaxed. . . . I find that I have separated in my collection 160 species. There are besides a lot not classified from Central Russia, Siberia, Caucasus, &c., making in all more than 2,000 specimens. But some are very bad, and if re-arranged the number of specimens and perhaps of species would be smaller. . . . A List of the Ephemeræ of Hungary sent to me by Frivaldszky gives only the following names: *Cænis lactea*, *Paling. longicauda*, *Oligoneuria pallida*, *Potam. gibbus* (?), *P. æneus* (?), *Cloëon dipterum* and another allied species, a species allied to *C. melanonyx* (?), *Baetis sulphurea* (?), *cerea*, and *fluminum* (?). The specimens are still in my collection. A List of the Ephemeræ of Bavaria still in my collection sent by Dr. Kriechbaumer gives *E. vulgata*, Tegernsee, common, June. *E. Danica*, very common, Munich, June. *E. lutea*, Burm. (*lineata* (?)), Tegernsee, June; Munich, July. *Potam. Geerii*, Tegernsee, Munich, July. *Cl. pumila*, Munich, June. *Baet. venosa*, Tegernsee, May—July. *B. lateralis*, Tegernsee, Munich, April to July. *B. fluminum*, Munich, June, July. [M. de Selys-Longchamp's specimen of *E. Hecuba* is not Dr. Hagen's type as I supposed.] I possess types of Walsh's species: *Baetis femoralis* ♂ ♀, sub. ♂ ♀; *B. alternata* ♂ ♀, sub. ♂ ♀; *arida* ♂; *sicca* ♂ ♀, sub. ♂ ♀; *debilis* ♂ ♀. *Pot. cupidus* sub. ♂ ♀; *odonatus* ♂ ♀ im. *Pal. vittigera* ♂, sub. ♀; *limbata* ♂; *bilineata* ♂ ♀, sub. ♂; *flavescens* ♂ ♀, sub. ♂ ♀; *interpunctata* ♂ ♀; *pulchella* ♂ ♀, sub. ♂ ♀; *terminata* ♂ ♀, sub. ♂ ♀. *E. decora* ♂; *flaveola* ♂ ♀, sub. ♂; *myops* ♂. *Ephemerella excrucians* ♂ ♀, sub. ♂. *Bætisca obesa* ♂ ♀, sub. ♂ ♀, pupa. *Cloë ferruginea* ♂; *fluctuans* ♀; *vicina* ♂ ♀, sub. ♂; *debilis* ♂ ♀, sub. ♂; *mendax* ♂ ♀; *unicolor* ♀. Only two are wanting,—*P.* 4-*punctata* and *Cænis amicus*. [*Ephemerella consimilis* and *Cloë dubia* are not given in the list.] Besides Walsh's types my collection contains, with few exceptions, only the types of my Ceylon and American

species. In the Museum here are very few *Ephemeridæ* besides mine and some good things from Hudson's Bay and New England. [His collection contains also types of the Corsican and Sicilian species (Hag. 1860, 1864) and a few others from Burmeister (1839) and Zetterstedt (1840). These last two sets have been noticed above in the notes referring to p. 10 of the Monograph; the other two sets will be treated of below in the notes referring to the descriptive portion of the Monograph, where also series of specimens from Cornelius, Imhoff and others contained in his collection will be particularized.]

Page 13. 1857.—Brauer. In continuation add; & 74 bis. *Pot. mesoleucus.*

Page 14. 1864.—Cornelius in Correspondenzbl. d. Vereins f. preus. Rheinlands, T. xxi. pp. 69—71, gives an interesting account of the apparition of *Pal. longicauda.*

Page 15. 1864.—Your reduction of the Corsican species described by me is apparently erroneous. [See below, note on p. 155 of the Monograph.]

Page 15. 1865.—Etn. [I have succeeded in verifying my conjecture that the female of Baetis enters the water sometimes for the purpose of oviposition. See below, note on pp. 118, 119 of the Monograph.]

Have you read the story of Ephemera by an old man, told by Ben. Franklin? A figure of an *Ephemera* in an old Chinese book is mentioned in Naturforscher, Stück vii. p. 30. Goetze, Beytrage, p. 204, confirms the observations of Schaeffer, and says that the same species lives in France (Seine, Marne), Germany (Donau, Main). He gives an interesting observation on the rearing of the insect. Hadrian Junius, in his Nomenclator, p. 84, gives only four words.

Page 17, line 13. [After ♀ add = *Polymitarcys.*]

Page 18, line 26. [Dele *zebrata.*]

„ line 32. [Dele ?; and before ♂ im. insert = *undatus.*]

Page 18, line 39, end. [Add = *undatus* ♀ im.]

„ line 44. [Dele *zebrata.*]

Page 19. [Between *iridana* and *lateralis* insert *Krueperi*, Stein ; in *Potamanthus*, Stein ; (?) *Leptophlebia*, Etn.]

Page 19, line 12 from bottom. [For *insignis* read *longicauda*.]

Page 20, line 4. [For nov. sp. read = *undatus*.]

„ line 10 from bottom. [Dele "either a *Heptagenia*, or."]

Page 21, line 7 from bottom. [Omit all the citations after Burm., and instead of them read = *dimidiata*.]

[Then between *lactea*, Burm., and *luctuosa*, Burm., insert ‡ *lactea !* Pict. . . . . &c. = *chironomiformis* ?]

Page 22, line 17. [Before ♀ im. insert = *Polymitarcys*.]

Page 23, line 13. [Dele ?; before im. insert *undatus* ♂.]

„ line 15. [Before ♀ insert *undatus*.]

Page 24, line 3. [Omit all after 206, and read = *Leptophlebia*.]

Page 24, line 10. [Omit all after 476, and read = *Leptophlebia*.]

Page 24, line 11. [For *Cloëon* ? ♂ read *Baetis* ♀.]

Page 26. [Between *cincta*, Retz., and *cognata*, Ste., insert *citrina*, Hummel, Ess. Ent. iv. 21 = *Heptagenia elegans*, subim. ?]

Page 27, last line. [Dele *longicauda*.]

Page 29, line 9. [Dele Seetzen (1794).]

„ line 12. [Before Pz. insert Seetzen (1794).]

Page 30, line 8. [For (sp. ?) read *dimidiata*, subim. ♀.]

Page 32, line 3. [For *Baetis* ? read *Polymitarcys albus*.]

„ [Between *elegans*, Curt., and *flaveola*, Pict., insert *fallax*, Hag. ; in *Baetis*, Hag.]

Page 33, line 6. [After Pict. add Typ. *H. limbata*.]

„ line 18. [After Walk. add Typ. *L. marginata*.]

„ line 35. [Add = *Baetis*.]

Page 33, line 43. [Between *scita*, Walk., and *strigata*, nov. sp., insert *signata*, Hag.; in *Cloë*, Hag.]

Page 34. [Between *Taprobanes*, Walk., and *vespertina*, Lin., insert *tristis*, Hag.; in *Clöe*, Hag.]

Page 34, line 20. [For *chironomiformis* read *dimidiata*.]

„ line 24. [For *Baetis* read *Polymitarcys*.]

„ line 3 from bottom. [After described, insert = *Hexagenia albivitta*.]

Page 35, line 3. [Dele = *longicauda*.]

„ line 14 from bottom. [For *Campsurus* read *Polymitarcys albus*; dele?]

Page 35, line 8 from bottom. [After described, insert = *Campsurus latipennis*?]

Page 36, line 8. [Before *indicus*, insert as first in the series, *albus*, Say; in *Baetis*, Say; *Palingenia*, Hag.]

„ line 3 from bottom. [Before = insert Brau. N. Aust. 74, bis.]

Page 37, line 11. [For *Leptophlebia* read *Baëtis*.]

„ [Between line 17 and line 18, insert *mesoleucus*! Brau. N. Aust. 74, bis = *Leptophlebia*.]

Page 38, line 6. No described *Ephemera* is contained in Stettin amber. Amber is either not found at all at Stettin or only rarely. All the amber insects are from Eastern Prussia, from between Danzig and Königsberg to Memel. I believe that when I described the amber species my knowledge of the living forms was rather limited; perhaps other conclusions respecting them would be arrived at now.

Page 38. 1856.—Goldenburg. I also believe that *Dictyoneura* does not belong to the *Ephemeridæ*.

Page 38. 1861.—H. A. Hagen. My Solenhofen *species* are perhaps untenable. Of *Ephemera cellulosa* I have now beautiful specimens, and even of *mortua* some better ones.

Page 38. 1865.—Leonhard and Geinitz, Jahrb. f.

Mineral. &c., p. 385. *Ephemerites rupestris* is not a name given by me, [as I supposed it to have been; see Monograph, p. 40.] Prof. Geinitz sent a photograph to me, and I wrote my opinion about the species. I do not know whether the figure is exact.

Page 38. 1864 and 1866.—Scudder. [Mr. S. H. Scudder's papers are published in the American Journal of Science, xl. 269—271; and in the Proc. Boston Soc. Nat. Hist. (December); separate p. 20, pls. 4.]

Page 39. I am of your opinion concerning the species described by Scudder. But I would observe, that, up to the present time, I have been unable to obtain access to any of the types. . . . The three species described by Mr. Scudder as *Gerephemera simplex*, *Ephemerites gigas* and *affinis*, do not belong to insects at all. If you will compare the figures and descriptions of fossil plants from the same localities given by Lesquereux in the 4th volume of the Geological Survey of Illinois, you will see at once that the *Ephemerites* are only parts of leaves of *Hymenophyllites* or of *Neuropteris*. I believe that some other of the species are similar.

Page 41. An observation that in copula the male of Ephemera is beneath the female, is to be found in Latr. Hist. Nat. ii. 238.

[In the notes below will be found detailed accounts of the entrance into water for oviposition of the female of *Baetis* (Note for p. 119, *B. pumilus*), and of the casting of the subimaginal pellicle of *Cænis* (Note for p. 95, *C. dimidiata*).]

Page 45. [Transfer "[puella] New Orleans" from Campsurus to Polymitarcys.]

Page 46. [Transfer from p. 48, Gen. xxii., and insert after Leptophlebia femoralis, "tristis . . Rainbodde, Ceylon," and "signata . . Rainbodde."]

Page 46. [Transfer "Krueperi . . Greece" from Leptophlebia to p. 47, and insert it after Baetis binoculatus.]

[Give Sydney as the locality of "Leptophlebia [costalis]."]

[Insert *mesoleuca* . . Austria, between *Lept. modesta* and *fusca*.]

Page 47, line 2. [For russulum read rufulum.]

Page 47. [Merge with Baetis undatus, B. fluctuans, pictus and ferrugineus.]

Page 47. [Baetis? [albus] and? [Ephoron leukon] are probably Polymitarcys puella.]

Page 48. ["Heptagenia? [tessellata, *Hag.*] Puget Sound; Washington," is almost certain to be Leptophlebia colombiæ, p. 46.]

Page 54. *Lachlania.*—I examined 19 ♀. They are not in very good condition; the eggs in most are either deposited or just coming out. The ventral segment with the eggs coming out seems open at the sides. This I have designated (perhaps improperly) the egg-valve. The specimens are not in sufficiently good condition to enable one to be entirely sure about this formation.

[I have examined a ♀ *Lachlania* in Mr. M'Lachlan's collection, and find no trace of an extension of membrane in the form of an egg-valve, such as may be found in *Heptagenia*. The oviducts are unprotected as in *Ephemera*.]

Pages 55, 56. I have compared the figures of *Olig. pallida* with my type, and believe them to be correct for the forceps. The forceps is 3-jointed, one long basal and two short apical joints. The membrane below is rounded before, and the penis is nearly covered by it. *O. Rhenana* has the forceps three-jointed, the penis bifid and considerably longer than the quadrangular membrane below. In both species the forceps is more membraneous than corneous. I remark purposely that of both species I have only one male imago before me, and only one female imago of *O. pallida*. In Imhoff's collection in the Museum, I found seven ♂ and more ♀ subimagines of *O. Rhenana*, all alike as to the penis and the membrane below it, excepting one, which is more similar to *O. pallida*. I am not sure that these males are not imagines, the imago described from Von Heyden's collection being not at hand now. Two female imagines from Elberfeld are very similar to the female *O. pallida*. Of course new observations are necessary.

[In August, 1871, I again took *Oligoneuria Rhenana* ♂ imago on board a steamer at Cologne. The structure

of its genitalia quite corresponds with the figure in my Monograph. It is preserved in fluid. I suspect that my caution respecting dried specimens (Mon. p. 56) was therefore not altogether misplaced. When I was writing that caution, I had in my mind the results of some early investigations of dried specimens, in the course of which I managed to fabricate two if not three species out of British and foreign examples of *Cænis macrura*, and I do not know how many out of *Heptagenia elegans*, all authenticated by camera lucida drawings of structures! Is it not natural to be sceptical of drawings made from dried specimens after that?]

Page 57. *C. latipennis.*—*Palingenia umbrata*, Hag. Syn., is a *Campsurus* in very bad condition: perhaps *C. latipennis*. The specimen is a little smaller than your dimensions.

Page 58.—Pictet's *Pal. puella* is, after the figures, surely a *Polymitarcys* and not *Campsurus*. I believe it will go with *B. alba*. *B. alba*, Say, is a *Polymitarcys*. I caught it at Niagara Falls at the end of August, swarming just like *P. virgo*, to which species it is closely related, though distinct. It is undoubtedly *Ephoron leukon*, Williamson, from New Jersey. I have a male from N. York, taken not so very far from Belleville, N. Jersey. The colour of the abdomen alone would not agree. The type from Red River is a female, and smaller than some males. The description of Say has apparently nothing in common with *B. ferrugineus*. Of course this is a matter of opinion. The reference to snow flakes makes me believe it to be a *Polymitarcys*.

[I had not seen a *Polymitarcys* from America, and was inclined to suspect that the third seta in Pictet's figure was merely an artistic embellishment. With this bias, I was led to refer *P. puella* to *Campsurus*, that it might be near *P. albicans*. I was induced to attach some weight to Mr. Walsh's opinion about the relations of *B. alba* to *B. ferrugineus*, from the supposition that he would not have differed from Dr. Hagen without some good reason. I entirely concur with Dr. Hagen now.]

Page 59. *P. dorsalis*, Burm. One of my (3 ♀) specimens is nearly as small as Pictet's type, the others larger. Burm. gives the length 10 lin.

Page 60. *Polymitarcys virgo.* Pallas, Iter, i. p. 15, found near Choroshown, a village near Moscow and the river Moskwa, the larva of *E. horaria* [= *P. virgo*] very common, boring parallel tubes in the clay, which are also to be found in the more hardened earth. (Extract from Pallas's MS. notes in Linné, Syst. Nat. ed. xii.)

The manuscript descriptions of Pallas's Insecta Russiæ contain, inter alia, *Ephemera lactea* [of which Dr. Hagen transcribes the description, and states that it is apparently *P. virgo*]. In Tauricæ campestribus sub finem Julii ad rivulos passim frequens vespertino tempore: ad lucem advolat, et ovorum femina subito ejicit flava, modo integra, modo per proportiones, remanenti pellucida albida.

Page 61. [Between *P. indicus* and *P. macrops*, insert the foot note on p. 124, and the description, &c. of *C. puella*, pp. 58-9.]

Page 62. *P. longicauda* and *fuliginosa.* I believe *E. fuliginosa* is a different species from *longicauda*, and if you saw it you would have no doubt as to its being so. The parts which in *P. longicauda* are light yellow-gray, even in Hungarian specimens, are in *P. fuliginosa* dark coffee-brown, even in specimens nearly seventy years old. I have had hundreds of *P. longicauda* in my hands, and even now in my collection are twenty-seven from Cornelius . . . and a type of E. flos-aquæ, Hoffmansegg, from Hungary. [The omission relates to several German localities which need not be specified.] *P. longicauda* was sent by Frivaldszky to me from Hungary, and is in my collection.

Page 64. *H. albivitta.*—P. dorsigera, Hag. MS., Synop. 304 from Buenos Ayres (not as is erroneously stated from Monte-Video), is *H. albivitta.*

Page 67. I have two *Hexageniæ* from Mexico, one with dark coffee-brown wings, which I do not find in your Monograph.

Euthyplocia Hecuba. You speak of a male from Selys determined by me. So far as I remember I have either only glanced at it, or there is some mistake.

[On referring to my notes of the collection alluded to, I find "Hagen's type, Mexico," set down against the name of the present species.]

Page 69. *Ephemera vulgata* and *Danica*. A list of the *Ephemeræ* of Bavaria, sent by Dr. Kriechbaumer, contains both species [see Note, pp. 13—14, above]. So does a set of *Ephemeræ* sent by Schmidt from the neighbourhood in which Scopoli collected. I do not know whether the copious and exceedingly abundant species, used as manure in Laz (according to Scopoli), is *E. Danica* or not.

Ephemera guttulata. [See Note to p. 8, above; *B. maculipennis*.] The type of *decora*, Walsh [♂], hardly agrees with my like-named species, but is perhaps not distinct. My *natata* from Saskat[chavan] is larger, and (so far as I can see in ♂ ♀ im. and subim.) different in colour; but the appendices seem similar in form, though I have not quite completed my examination.

Page 71. *E. myops*. The female from New York, quoted by you as perhaps referable to *E. myops*, is a new and entirely different species, analogous in colour to *E. Danica*, but much brighter.

E. lineata. I believe that my *lutea*, Burm., is your *lineata*; and this species differs from that represented by the four ♂ ♀ subim. from England, described as *glaucops*, which agree with Pictet's characteristics of this last-named species very well.

[In a more recent letter to Mr. Walker, I have suggested that the four specimens alluded to are not genuine British insects, but Swiss or Italian examples of *E. glaucops*, which were accidentally arranged in some series of English *Ephemeridæ* by somebody or other. I do not know who gave them to Dr. Hagen. Mr. Walker in reply says of *E. glaucops*, "I think with you that it has been called British by error." My guess in my Monograph was based upon the assumption that there was no doubt as to the specimens being British. As the matter stands now, I think that this assumption had better not be made.]

Page 74. *E. fasciata*. [My figures of details agree with the structure of Dr. Hagen's type.]

Page 81. *Leptophlebia costalis*. [Habitat Sydney (Brauer).]

Page 82. *L. Taprobanes*. After the forceps in your work, I have no doubt that *Pot. annulatus*, Hag., is *B.*

Taprobanes, Walk. Only the genus *Baëtis* led to my error.

[What then becomes of my *L. annulata*, of which I accepted as types a ♂ im. in the British Museum, and another ♂ im. in M. de Selys-Longchamp's collection, both of them said to have been authenticated by Dr. Hagen? I suspect my fig. 23 (immediately below 23 a, b, and accidentally unnumbered), in which the terminal joint of the forceps is not represented, having been concealed by the penultimate joint from the point of view from which the drawing was made, is the cause of misapprehension. The proportions of the last two joints are given in 23 a. The forceps in both *L. Taprobanes* and *L. annulata* are very much alike; it is the penis which should be taken as the principal criterion of identity in examining specimens of *Leptophlebia*, and of this structure Dr. Hagen makes no mention. It therefore remains to be seen whether *annulata* should be reduced to a synonym or not. I still suspect that the species described by Dr. Hagen in 1858 is distinct from Mr. Walker's *Taprobanes*.]

Page 83. *Lept. femoralis*. I possess ♂ ♀ imago and subimago. The tarsi of the hind legs are four-jointed; claws alike very small. The forceps, penis and hind wings are greatly damaged; but with care everything can be made out. The middle seta is wanting (broken?) in all; but I believe the species belongs to this genus.

[The absence of the middle seta in the Ceylon species seems to have caused Dr. Hagen a little trouble and hesitation. In my characters of this series of the genus I have stated that these species usually cast off the intermediate seta. Now and then individual specimens retain it, but they are scarce.]

[After *L. femoralis* some of the "Species generis incerti," described in the foot-note of pp. 131–2 of the Monograph, should be inserted; my conjecture as to their belonging to *Leptophlebia* having been verified by Dr. Hagen.]

Page 83. *Lept. tristis* [Monogr., p. 131, foot-note, No. 1.] I have never stated that the male of this species has three setæ (as you say at p. 131); only of *C.? signata* did I mention this. In fact I had seen of *L. tristis* only the female subimago; which, when alive, is stated to be "oculis parvis nigris." One of my types is in good con-

dition, with tarsus of the hind legs (I believe) four-jointed, the wings as in *Leptophlebia*, and the hind wings as in your fig. 24.

Lept. signata [Monogr., p. 132, foot-note, No. 4] is perhaps *Leptophlebia;* and, so far as I can see, the only Ceylon species with three setæ, as I stated before.

Page 84. *Leptophlebia colombiæ. Baetis tessellata*, Hagen. You say the type is in the Berlin Museum; but I say (p. 51), at the end of *Baetis*, "I saw a species of *Baetis*, from Mexico, in the Berlin Museum." *B. tessellata* is still in my collection; a female subimago, with posterior tarsi four-articulate.

[Insert here the foot-note to p. 150 in the Monograph. The possession of four-jointed hind tarsi quite falls in with my conjecture.]

Page 85. *Leptophlebia marginata.* In May, 1853, I caught, in a small river near Königsberg, a very common nymph, which I think may be referred with certainty to this species. The living nymphs are dark brown and polished: in alcohol they easily lose the gills. Roesel, II., xii., 1, 2, seems to figure my larva and subimago. His observation of the copulation of the subimago seems to be an error. I still possess the nymph.

Page 86. [Line nine from bottom; for "maroon-brown" read "castaneous."]

L. ? *Krueperi.* [Herr Stein, in May, 1871, wrote to Mr. M'Lachlan asking him to tell me that this species, according to his later observations, "does not belong to *Leptophlebia*, but to *Baëtis*, Leach. The mutilated individuals possess the remains of only two tails, instead of three." It was the colour of the insect which had most to do with my questioning the reference of this species to *Potamanthus*, Pict.]

Page 87. *Leptophlebia Picteti.*

[Imago ♂ v. s. s. Venæ in areæ marginalis apice simplices rectæ. Crura posteriora albida. Setæ fusco-piceæ, juncturis piceis.

Habitat.—Pallanta, Italy. August.

The lobes of the penis are narrow, and towards the

apex are suddenly contracted to a slender point. The appendages beneath it are linear, and are about half as long as the lobe. (From a specimen in Mr. Albarda's collection).]

Page 87. *Leptophlebia cincta.* I believe *E. halterata*, Fab., to be a *Cœnis;* and if the descriptions in the different works of Fabricius be carefully compared with one another, I think my opinion will be established. In the diagnosis in Sp. Ins., Mant. Ins. and Ent. Syst., it is expressly stated, that the species has only two wings, though in Gen. Ins. this was only given in the description. Fabricius of course considered this to be an important character. The words "alæ magnæ" in Gen. Ins. are not afterwards repeated in Ent. Syst.; and the words "margine crassiori nigricanti," together with the arrangement of *halterata* before *E. brevicauda*, seem to be very agreeable with the supposition of its being a *Cœnis*. "Abdomine fusco," given in Gen. Ins., is a character presented by dead males only, and is afterwards rightly omitted. The "setæ triplo" (Gen. Ins.), or "quadruplo longiores" (Ent. Syst.), is applicable only to the male. The citation from De Geer is apparently erroneous.

[What led me to refer *E. halterata* with a query to *Leptophlebia cincta* was my giving some importance to this citation of De Geer. Having accepted this reference, I felt bound to reconcile the diagnosis of Fabricius with the species of De Geer. Accordingly I supposed that either "alæ magnæ" was equivalent to "large wings" (an expression implying the presence of a smaller pair), or I supposed that Fabricius' type had lost the posterior pair (a thing that has often occurred in my own collection, where *Psocidæ* used to provide me with dipterous examples of *L. cincta*, and of various sorts of *Baëtis*, ad libitum); and I further assumed, that Fabricius must have counted the abdominal segments in this instance from tail to head. If Fabricius' reference to De Geer is worth nothing, these suppositions of mine are also of no value, and Dr. Hagen's relegation of *E. halterata* to *Cœnis* is completely substantiated.]

Page 88. *Leptophlebia vespertina.* I have types of Zetterstedt's species. I used to think them to be identical with *Pot. brunneus*, Pict., but this must be verified.

Page 90. At bottom insert—

[*Leptophlebia mesoleuca.*

Potamanthus mesoleucus, Brau. 1857.

Imago, v. s. s. Tergum thoracis aterrimum politum. Alæ vitrinæ, venis fuscis; anticis, nervis in areæ costalis apice curvatis plerumque simplicibus. Pedes albi femoribus fuscescentibus; antici saturatiori. Abdomen decoloratum, setis albis juncturis obscurationibus. Forceps albus. Penis appendiculatus, segmentis ejus appendiculis parum brevioribus; his paulo eis *L. modestæ* latioribus.

Long. corp. 6—7 mm.; set. circa 8 mm.

Hab.—"Im Prater an Sümpfen. Juni." (Brau.)

Mr. Albarda drew my attention to my having overlooked Brauer's Supplement, at p. 74 bis of his Neuroptera Austriaca, and sent me types from Brauer of the *Baetis sulphurea* and *Pot. mesoleucus* there described. The former is not Pictet's species (which is *Heptagenia elegans*, Curt.) but another, which is allied to *Heptagenia flavipennis*, wanting the bands on the femora. It will have to be renamed. From the type (♂ im.) of the second of Brauer's species, I was able to determine the relations of *L. mesoleuca*. It has the forceps and adjacent ventral plate very like those of *L. modesta;* but the apical joint is as long as the second, and each of them is as long as the first.]

Page 93. *Cœnis macrura* (*halterata*, Fab., Hag.). I have before me a lot in a phial dry, perhaps more than a thousand. They are from Rismansfelds, a little bath-place near the Frisch Haff, where in the gardens the tables are covered with them in the morning, to the depth of some inches. Pictet, p. 42, relates nearly the same thing of his *C. lactea*. I have specimens from Eastern Prussia, (Königsberg.)

Page 94. *Cœnis lactea*, Pict. (? *chironomiformis*, Curt.). I possess a lot sent by Bremi "17th June, 1854, very common on the lake at Zürich." This is apparently Pictet's species, and I had it with me in London, but none of the specimens in Stephens' collection agreed with them. But this is not my *halterata*, nor the *lactea* of Burmeister. I believe that *C. chironomiformis*, Steph., was ♀ of my *halterata* [*i. e.* of *macrura.*]

Page 95. *Cœnis dimidiata* (*lactea*, Burm., Hag.; *E.*

plumosa (♀ sub.), Mül., Hag.). On the 26th and 27th of June, 1869, between 6 and 7 P.M., at the border of a large pond (Obertisch) near Königsberg, this species was exceedingly abundant. After sunset it disappeared. In a short time I was covered with subimagines preparing for metamorphosis. Having sat still a few minutes with expanded wings the subimago exhibited a tremulous motion; the skin split along the whole length of the median dorsal suture of the thorax; the head appeared; the wings were going down in the manner of a roof near the abdomen, and by visible peristaltic motion the abdomen and the setæ were got loose, and by continued efforts and wriggling of the body from side to side the thorax and wings slowly (in one minute) came out. The legs until then are kept by the exuviæ quite close to the body, nor can they be extended before the wings are entirely free and suddenly erected. As soon as this is effected, the legs take hold of something and finish the freeing of the abdomen and setæ by walking away from the skin. The insect then flies off from its seat. The empty skin of the subimago is very delicate in texture, snow white, and the thorax is gray with a grayish bundle of crumpled-up wings on each side. I was unable to find pupa or pupa-skin on the plants in the water or on the water. As the subimago was of course just risen, the insect probably undergoes the transformation from nymph to subimago in the water, like *Pal. longicauda*. I pinned several subimagines, and found that the thorax afterwards underwent the metamorphosis, and so the specimens are half imago half subimago. Perhaps this fact may explain some descriptions in the authors which are not applicable to known living species. All specimens in a collection with the wings bent down may be suspected of being in this transition state; but the imago sometimes assumes the same posture when pinned. Concerning the ocelli, Pictet has a very important error. The two lateral ocelli, shortly stalked, are very near the oculi (vide Burm.), just above the base of the antennæ, and not, as in Pict. Ephem. pl. xliii. 2, in the middle of the front. The anterior ocellus, situated below the margin, is nearly invisible from above. It is overlooked in every description that the middle seta is longer than the others, and that all three of them in subim. ♂ ♀ and imago ♀ very soon after the base are pilose and have a stronger pilosity at the tip. I have specimens from Hungary.

Two males caught after 10 P.M. in another locality are

paler (and so far as I can remember, all specimens caught late in the night are not so dark in colour), but the fore femora are darker.

Two males caught at Neuhausen, not far from Pillau, were sent to me by Prof. Zaddach as *luminous* insects. He had seen them in the night giving a small blue light.

[My own observations of the moulting of the subimago quite tally with Dr. Hagen's. I have likewise failed to find the pupa-skin on the water out of doors. But I found that the specimens which I reared in the house in flower-pot saucers, changed from nymph to subimago at the surface of the water, and left the empty pupa-skin afloat, just as *Baetis* or *Ephemera* does. I had intended to describe the visual organs in some future part of my work when treating of the comparative anatomy of the *Ephemeridæ*. Perhaps I may never have time to do this. In my descriptions I have indicated that the central seta is not invariably the longest.]

Page 96. *Cænis discolor*. My type was labelled "albida" in Winthem's collection; but it is closely conformable with Burmeister's description. It has unusually long wings, and perhaps represents a new genus. Habitat. Caffraria.

Page 97. *Cænis luctuosa*. My collection contains specimens from England, Germany and St. Petersburg.

I think *Cænis* to be more nearly related to the old *Palingenia*, *Oligoneuria*, &c., than to the genera with which you class it.

[I have stated some of my grounds for considering *Cænis* to be closely allied to *Leptophlebia* rather than to *Palingenia*. In my paper on the nymph of *Cænis* (Etn. 1868) I also stated my belief that *Oligoneuria* will be found to be very nearly related to *Cænis*; but without knowing the nymph I decided not to remove that genus from the neighbourhood of the old *Palingenia*.]

Page 102. *Cloëon dipterum*. Larva yellowish-brown, the head a little darker, eyes black; thorax with a dark spot on each side, legs pale; as far as the middle of the caudal setæ the joints have dark basal rings and are hairy. Length 7mm.

Nymph (winged) or pupa. The abdominal segments,

2—6 above, have on each side a pale spot behind a darker dot, and in the middle of their base a small yellow triangle. Up to the middle of the setæ their joints have dark rings at the base; then comes a long black space divided into three by fine pale rings; next come three joints entirely pale; the rest of the seta is dark. The setæ are plumose from the base as far as the terminal dark portion; their long hairs are white on the three pale joints, nearly black on the long black space, and dark between it and the base. Length of body 8mm., seta 6mm. [The setæ of *Siphlurus* are rather similar.]

Subimago. Eyes black, the turban orange, head and thorax dull brown, wings ashy-grey. Length of seta 8mm.

Page 105. *Cloëon rufulum* [misspelt *russulum*]. Now some words about your nomenclature. You write *E. russula*, Müller; but he wrote *rufula*.

[Familiarity with the fungi of the genus *Russula*, Fries, led me to write *s* for the old italic *f* and then to double it.]

Page 108. *Centroptilum luteolum*. I do not know why you have taken Müller's *E. luteola* for this species. I do not understand the word "lepidota" used by him; it is not old Latin; perhaps it means iridescent. Müller would not have forgotten to mention the brown tip of the abdomen; or he had seen the female only. Your determination is possible; but that is all that can be said about it.

[The diagnosis of Müller's species is "E. luteola, lepidota lutea cauda biseta, alis pedibus setisque albis." From its position in the book, one would be led to search for the insect referred to in Pictet's genus *Cloë*. Three species of *Cloë*, whose females are yellow, occur in Denmark, viz.:— *Cloëon rufulum*, *Centroptilum luteolum* (*translucidum*, Pict.) and *Baëtis binoculatus*. Of these the first is dipterous, the other two have rudimentary hind wings, those of the *Centroptilum* being the smaller. Müller describes the male of the *Cloëon* under the name of *E. rufula*, immediately after the diagnosis of *E. luteola*. He also describes the male of the *Baetis* under the name *E. diaphana*, next but one before the diagnosis of *E. luteola*. He notes of *E. rufula*, "Diaphanam refert, at alæ minores nullæ, nec squamulæ," which implies that he knew that

diaphana has scale-like hind wings. The word "lepidota" (Greek for scaly) occupies in the other diagnoses the position which is held by "diptera" in the diagnosis of *E. rufula*, and therefore no doubt refers to the scale-like hind wings. *E. luteola* is therefore probably the female of the *Baetis* or of the *Centroptilum*. The words "pedibus setisque albis" are more generally applicable to the female *Centroptilum* than they are to the female *Baetis*.]

Page 110. Genus Baetis. Imago.—You have forgotten to state the number of joints in the posterior tarsi of *Baëtis*.

[They are four-jointed, and the proximal joint is longer than the second or third.]

Page 111. *Baetis binoculatus*. You write *binoculatus*, Linné; I would never correct Linné in this way; the name *bioculata* is adopted by all writers.

[Messrs. J. W. Dunning and G. R. Crotch, both persuaded me to make the correction. We talked over the matter before the Catalogue of British Neuroptera was published in 1870.]

Page 118. *Baetis pumilus*. [In June, 1871, near Ashbourne, in Derbyshire, whilst searching in a very small streamlet for nymphs of *Nemoura* (the *N. cinerea* of M'Lachlan's Catalogue) at noon, I found a female of *B. pumilus* beneath the water depositing her eggs upon the under surface of a stone, which I turned up. The eggs were arranged close together in a single layer in the form of a rounded patch. When she was removed from the water, her wings erected themselves. Shutting her up in a box for security I hastened home, and (in about a quarter of an hour after her first capture) placed the stone, with her upon it, in a glass jar partly filled with water, leaving her, without further interference, exposed to the air. She very soon crept down to the water, and after feeling it carefully with her anterior legs, walked into it. As she entered it, her wings once more collapsed, folding together neatly lengthwise, so as to form a narrow pointed sheath, which extended over the back of the abdomen as far as the base of the setæ. If I am not mistaken the setæ were placed together side by side. She remained submerged several hours, quite at her ease, and died in the following night without returning to the air,—living

in fact about as long as she could have been expected to live after oviposition if she had never entered the water.]

Page 120, note No. 2. [If after the word "longissimis" in the diagnosis *oculis* be supplied, *B. speciosus* might be referred to *Heptagenia fluminum* ♂ im. The length "3 lin." in German lines would be equivalent to half an inch English measure, or nearly 13mm., which is the size of *H. fluminum* ♂ according to Pictet.]

Page 123. *Baetis undatus* (*fluctuans* ♀, Walsh, p. 122; *pictus*, Etn. p. 122; *ferrugineus* ♂, Walsh, p. 124).—*B. pictus* agrees after the description and the neuration of the hind wing very well with the two types of my *Cl. undata* from New York and the Red River. It also agrees perfectly well with the male type of *Cl. ferrugineus*, Walsh, from Rock Island, Illinois. Two females in Harris' collection, marked down by Say in his own handwriting as *Baetis descripticostata* from Dublin, N. Hampshire, are the same species. I once compared two types of *C. fluctuans*, Walsh, and I am now of the opinion that they belong to the same species. I believe I can see in one of the hind-wings the short longitudinal nervure not seen by Walsh. The two females differ in so far as they have very many fewer cross-veinlets in the fore-wing, especially near the terminal border and tip. I cannot now find any other difference, as their general arrangement is the same (though it would seem to be different by my communication to Walsh, p. 178). The other females also differ in the number of the cross-veinlets, but not so much. One has the border much less coloured with brown. The peculiar dotting of the body, &c. seems to prove completely the identity of *C. ferrugineus* and *fluctuans* as male and female of *undatus*. I have not seen Pictet's species. The figure is a bad one, but the description makes me believe in its identity with my *undata*, especially as your specimens are from Texas. Of course it is possible that other similarly coloured species may exist, though none so peculiarly marked are known as yet.

[The omission of any mention of the dotted marking of the legs and abdomen in the descriptions previously published, led me to fancy that the Texan specimens represented a new species, for I have not met with any similar pattern of leg-colouring in any other of the Ephemeridæ; This bar to the union of the four supposed species being

removed, there can be no doubt of their identity with one another. There is a sexual difference in the neuration of the wings in *Cloëon dipterum*, somewhat similar to that which is presented by *Baëtis undatus.*]

Page 131, foot-note No. 2—*consueta.* This species seems to be dipterous, at least some of the specimens do. A female subimago, however, has hind-wings. I stated I was doubtful if all of them should be placed together.

Page 136. *Heptagenia semicolorata.* My *Baetis semicolorata* is not at all your species, and the only one like it as to the forceps is your vi. 13 of *H. fusea.* I have before me several males and females from England. Judging from the egg-valve of the female (which I do not find in your work) it is scarcely a *Heptagenia* even. The figure vi. 9 is entirely different.

[With all deference to Dr. Hagen, I still consider my species and his to be identical. The differences between his specimens and my figures are due to his examples being dried specimens, and my drawings being made from specimens only just dead. Want of space compelled me to omit the figure of the last ventral plate but one ("egg-valve," Hag.) of the female, which is more deeply excised than is usual in *Heptagenia.* I cannot see much peculiarity in the nymph as compared with the nymph of *H. longicauda, venosa* or *lateralis;* but I do not possess the nymph of a yellow species such as *H. elegans.* Therefore at present I am disinclined to attach much weight to the peculiarity of the penultimate ventral plate. In dried males the lobes of the penis shrink a good deal, and their junction is concealed beneath by the penultimate ventral plate. This plate, too, is not then backed up by the fleshy cushion of integument which, in my figure taken from a a recent example, is seen to intervene between it and the penis; and so the last visible ventral segment in a dried specimen exhibits only the two triangular lobes which are seen in my figure beyond the semicircular protuberance of the belly of the segment. To prevent any chance of a mistake, I may say distinctly that Stephens' species is identical with Curtis'; Dr. Hagen has seen Stephens' types, and his species is identical with Stephens'; and I also have compared my types with Stephens', and find them likewise identical.]

Page 143. *Heptagenia flavescens.* Your figure of the forceps is not very correct.

Page 145. *Heptagenia elegans.* [The following is probably the subimago.] *Ephemera citrina,* Hummel, 1825.

" Ephemera citrina, cauda biseta, flava, alis flavissimis posticis margine nigricante."

Descr.—" Statura et similitudine *Eph. bioculatæ* sed major, et alæ coloratæ. Caput flavum, oculis nigris tuberculis luteis. Thorax flavus, luteo-variegatus. Abdomen flavum, linea longitudinali et strigis transversis fuscis, segmentis duobus ultimis albidis. Setæ corpore duplo longiores, albidæ fusco-annulatæ. Alæ reticulatæ citrinæ parum hyalinæ, anteriores margine antico obscuriore; posteriores margine postico nigricante. Pedes flavæ longitudine æquales. Long. corp. setis exceptis 5 lin. Alæ anticæ 2 lin. Habit. Petropolis."

[In the foregoing description I may observe that *Eph. bioculata* probably stands for *bioculata,* Röm., i. e., *H. elegans;* " caput . . . tuberculis luteis" most likely refers to the rhomboidal spots near the eyes above; and the last two segments of the abdomen of *H. elegans* are often pale ochreous above.]

Page 146. *Heptagenia fluminum.* [To synonyms add (?) *E. speciosa,* Pod. 1761: and refer to Note to Mon. p. 120, No. 2.]

Page 151. *Heptagenia venosa.* According to your figure of the forceps and your description, my species is identical with yours. Fabricius has in all his four works the diagnosis of his species in precisely the same words. In Sp. Ins. he adds the citation from De Geer. The description of De Geer is long, and contains nothing to oppose the identification of his species with that of Fabricius, who gives Denmark as a locality. Müller makes no mention of the species, unless it be the altogether insufficiently described *E. gemmata.* Villers names the species *E. nervosa,* but does not state why he did this. Burmeister's short diagnosis corresponds, if the " subtus ochracea" is De Geer's " subtus grisea;" only the abdominal segments " basis ochraceis " are not mentioned by De Geer. The dimensions agree, and Curtis's *B. dispar*

is quoted. Pictet cites all the authors mentioned; but his citation of Burmeister is doubtful on account of his not having seen the types. But I believe Pictet's species to be different from that of Fabricius and De Geer. The eyes are in Pictet said to be brown; in De Geer sea-green. the abdomen in Pictet "fauve," marked with black; in De Geer very dark brown, nearly blackish: Pictet "Les ailes sont transparentes . . . avec des nervures noires, . . . vers l'extrémité de la région costale . . . une teinte brune;" De Geer hyaline without colour. Pictet does not mention the "abdomen subtus griseum." My type from Elberfeld is exactly like your *H. venosa*, though I believe the ventral lobe of the last segment in your figure to be not sufficiently rounded; I did not give the penis because it agrees with your vi. 24. The border of the ventral membrane is more rounded and has only a tubercle at the side; in my *H. venosa* from Corsica the border is less rounded and has a tooth at the side; in *H. gemmata* the border is nearly straight, and has a triangular lobe at the side. In the last two the two spines between the lobes of the penis are wanting; the form of the penis and the ensiform inferior processes are different. The ventral lobe of the same segment in the female is also different. I did not find these species in your Monograph. I believe that *E. maculata*, Poda, does not belong here.

[I hardly know whether to attach much importance to the preceding discrimina, because they are based upon comparisons of dried specimens; but I give them for what they may be worth. The figures of the ventral lobes of the females in particular appear to me to be taken from distorted examples. Still they might be found of some use in investigations of dried specimens. The only very positive and trustworthy distinction mentioned is the colour of the eyes,—brown in *H. venosa*, and sea-green in De Geer's species.]

Page 152. *H. longicauda.* [Add *Baetis montana*, Hag. 1863 (nec Pict.), to the synonymy of this species.]

Page 153. *Heptagenia insignis.* [Erase from the synonymy "*Baetis montana*, Hag. 1863; (nec Pict.)" Dr. Hagen encloses a figure of the forceps and penis of his species, and rightly observes that it is distinct from *H. insignis*. His drawing appears to be made after a dried specimen; and I take it to represent the genitalia of

a dried male of *H. longicauda*. Dr. Hagen's description in the Brit. Synop. seems to be compiled from Pictet, and not to have been drawn up from English insects.]

Page 155. *Heptagenia zebrata*. Your reduction of the Corsican species described by me is apparently erroneous. I give here the diagnoses of the forceps and penis. Your f. 24 is probably *fallax*, but (as you see) it is very different from the *zebrata* and *fluminum*. I cannot find the others in your work. In *zebrata* the antepenultimate joint of the forceps has a lamellose dilatation on the inside after the middle. The apical border of the last ventral segment is strikingly different.

[The examples sent me by M. de Selys-Longchamps were in bad condition. I could not make satisfactory drawings of details of *zebrata* or *fallax* from them. My figure was taken from the ♂ im., labelled *B. fluminum*, Hag. Of my descriptions that of the subimago was taken from specimens labelled respectively *zebrata* and *fallax;* that of the imago ♂ from a specimen labelled *fluminum* (the subject of my figure); and that of the imago ♀ from a specimen labelled *zebrata*. The only ♂ imago amongst them was that which stood for my drawing.]

Page 156, foot-note. *E. gemmata*. Scopoli's figure is thoroughly bad, and only shows that the insect is a large *Heptagenia*. Amongst the *Ephemeridæ* from Carinthia sent by Schmidt to me is a species which agrees so well with Scopoli's description that I have no doubt of its being the same insect as his. I have my types before me. It is a *Heptagenia* very nearly related to your *H. venosa*. It is wanting in Steph., Burm., Ramb. and Pict. [For further particulars see above. Note to p. 151, near the end of the paragraph, by Dr. Hagen.]

XVI. *On the habits and economy of certain Hymenopterous Insects which nidificate in briars; and their Parasites.* By Sir Sidney Smith Saunders, C.M.G., V. P. Ent. Soc.

[Read 7th July, 1873.]

At the last meeting of this Society I exhibited a series of Hymenopterous larvæ, lately received from Albania in their respective briar-cells.

Mr. Smith having kindly undertaken to figure the remarkable larvæ of *Raphiglossa* and *Psiliglossa*, as well as a new genus of Fossorial *Hymenoptera*, forming a connecting link between *Nitela* and *Pison*, I avail myself of this opportunity to supply some details of the habits and economy of these insects, all reared from briars on previous occasions, and now brought for exhibition; including a fine species of *Halticella* (one of the *Chalcididæ*), parasitic within the larva of *Osmia tridentata*, as herein described.

Raphiglossa Eumenoides, Saund.

Trans. Ent. Soc. Lond. Ser. 2, vol. i. p. 72 (1851), Tab. 6, fig. 4, ♂, ♀.

Sauss. Mon. Guêpes Sol. vol. i. p. 2. 1.

Psiliglossa Odyneroides, Saund.

Raphiglossa, Saund. Sect. B., Trans. Ent. Soc. Lond. Ser. 2, vol. i. p. 72 (1851), Tab. 6, fig. 2 ♂, 3 ♀.

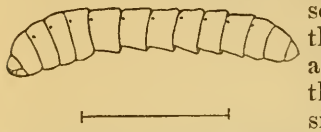
Stenoglossa, Sauss. Mon. Guêpes Sol. p. 4.

Psiliglossa, Saund. Trans. Ent. Soc. Lond. 1862, p. 42.

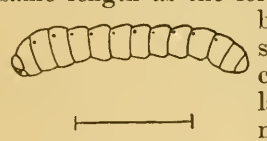
Both these elegant insects, belonging to the family of the *Eumenidæ*, frequent the plains around the Ambracian Gulf, where they select, in preference to other briars, those which are upright and soft, growing in moist situations, which, being exposed to the rain at top, are generally filled up towards the exterior with two or three inches of earth

to protect the larva cells, these being frequently continued down to the level of the soil; presenting in some instances as many as thirteen cells in a single stem.

The adult larvæ of *Raphiglossa*, as awaiting their pupa-metamorphosis, have already been described by me;* measuring about two-thirds of an inch in length and one-sixth of an inch in diameter, of firm fleshy consistency; their colour opaque-white; each successive segment presenting an overlapping margin; they are somewhat cylindrical and nearly of equal thickness throughout, with a slight distension about the thoracical region, and having the posterior margin of each of the abdominal segments below, vaulted and hollow.



Those of *Psiliglossa* I had not then observed, and it may be fitting, therefore, to institute a comparison between the two. The adult larvæ of the latter are nearly of the same length as the former, but of a pale yellow colour, broader, somewhat compressed and shining, the segments strongly incised but contiguous, and not overlapping, nor vaulted and hollow beneath; gradually tapering and upcurved at each end when lying on their back. Not being cylindrical they do not execute the same gyratory movements as the former. They measure from 15 to 18 millimètres in length, by 4 to 5 in breadth, and from 2 to 3 in thickness; the smaller ones being those of the upper cells, which, as usual, produce males. The parts of the mouth in both these larvæ are indicated by piceous lines and patches.



The respective segments, which are very distinctly indicated, may be defined as follows: the five anterior, including the head, are compactly welded together and incapable of separate action in the pseudo-pupa state; the 3rd, 4th and 5th bearing a spiracle on either side.

The thoracical region terminating here, the two anterior segments are assignable to the development of the imago head, as pointed out by Ratzeburg.†

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* Loc. cit. supra, p. 73.

† See Burmeister's Manual of Entomology, translated by Shuckard, p. 35, sec. 53. Note of Translator.

The remaining nine segments appertain to the abdominal region, whereof seven are furnished with a spiracle on either side; the last three segments, like the five anterior, being firmly united together.

By comparing these pseudo-pupæ of smallest and largest dimensions, as well as those occupying the extreme cells of a long serial sequence (representing males and females), the number of segments and their conformation as aforesaid are precisely identical. But on the development of the true pupæ, these three conjoined segments give rise to the additional abdominal segment and bivalved sexual organs in the male (Burm. § 152); which segments are wholly absorbed in the corresponding threefold organs of the female, comprising also the aculeus (l. c. § 143).

Thus Shuckard's remark (in the aforesaid note), "*that the larvæ of the males in the aculeate* Hymenoptera *will necessarily have an additional segment*," does not coincide with these results.

The imago *Raphiglossæ* are accustomed to repose for the night in a very peculiar position, the conditions of rest being best provided for by affixing their powerful mandibles to some rough projecting edge of the briar and then distending their body and legs horizontally, without other support than the twisting of the wings lengthwise beneath the abdomen, which are retained in position by the posterior legs, although even this process is frequently dispensed with.

This gymnastic feat is accomplished as follows:—After resting awhile on a projecting snag, the *Raphiglossa* drew back, laying firmly hold of the snag with its mandibles, leaving its body and the four posterior legs quite free from the briar. Then by a rapid movement curving the wings down longitudinally on either side beneath the abdomen, and projecting the two posterior legs as it were to retain the wings thus in position, the tarsi remaining free, and bending the abdomen downwards, it took up its position for the night, the intermediate legs remaining suspended, but the knees of all doubled up close; now and then raising the abdomen without thereby disturbing the wings, which remained closely doubled down independently of such movement. The antennæ were laid back on either side of the head, the mandibles forming the sole means of support, the forelegs being also doubled up close to the thorax and the tarsi turned back out of the way; the body

projected outwards in the form of a crescent. Not unfrequently, after fixing the mandibles, a kind of somersault is performed, whereby the *Raphiglossa* remains in a horizontal position with the back below and the legs uppermost, as a favourite posture for repose. One that I sent alive to Professor Westwood to exhibit its performances, took up this position of repose for the night; and another, which I had subjected to the action of cyanide of potassium in this posture, quietly and unconsciously swooned away, still holding on in its asphixy and remaining in situ after death.

Fam. CRABRONIDÆ.

Genus Niteliopsis.

Genus *Pisonem* cum *Nitelâ* nectens; huic habitu, illi tamen alarum constructione appropinquans.

Corpus parvum, nitidum.

Caput subrotundum. *Oculi* ovales, integri. *Antennæ* filiformes, thorace breviores, articulis brevibus, basali crassiore, secundo tertio et reliquis ferè æquè longis. *Mandibulæ* curvatæ, basi robustæ, prope medium excavatæ, apice acutæ, edentulæ. *Palpi maxillares* elongati, 6-articulati, articulo basali tenui, secundo robustiore, quarto longiore; tertio quinto sextoque brevioribus. *Labium* subcordatum, palpis labialibus brevibus, tenuibus, 4-articulatis, articulo basali elongato, 2do et 3^{tio} obconicis, extimo apice acuto.

Thorax elongatulus, anticè constrictus, in medio latitudine capitis, elevatus, rugosus, posticè angustè productus, truncatus. *Pedes* omnes tenues. *Tibiæ* læves. *Tarsi* unguibus pulvilloque parvis. *Alæ* anticæ cellulis tribus submarginalibus et perfectis; quarum prima subquadrata; secunda minima, petiolata, venas duas recurrentes accipiens, primam basi propinquam, secundam ultra medium; cellula tertia angusta transversa, lateribus ferè parallelis, supernè ad primam submarginalem inclinans.

Abdomen ovato-conicum, læve, nitidum, thorace brevius, angustius, brevissimè pediculatum.

Species 1. *Niteliopsis Pisonoides.*

Nigra, nitida; mandibulis apice castaneis; clypeo in utroque sexu pilis albidis sericeis circumcincto; prothoracis

lineâ interruptâ albâ; scutelli lineolâ vel punctis duobus albidis; calcaribus tarsisque pallidis, his apice nigrescentibus. Femina.

Long. corp. 5—6 mill.

Expans. alarum 8—10 mill.

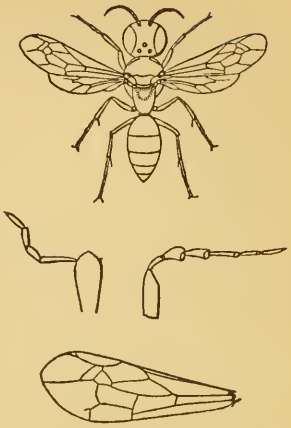
Mas, similis at minor, antennis apice acutis, 13-articulatis.

Long. corp. 4—5 mill.

Expans. alarum 7 mill.

Habitat in Insulis Ionicis (Corcyrâ et Leucadiâ) rubis exsiccatis. Imagines mense Julio maturatæ.

In Mus. nostro.



From one of the pupa-cases, in nowise differing from the others, the following parasite was obtained.

Homalus nanus, n. sp.

Aureo-violaceus, elongatulus; capite thorace, abdomineque, latitudine ferè coæqualibus, punctatissimis; antennis nigricantibus; meso-metathoraceque viridescentibus, maculâ centrali fulgente-aureâ; abdominis disco subobscuro, basi, apice, lateribusque viridi-cupreis; femoribus, tibiisque anterioribus viridi-violaceis; posticis, tarsisque omnibus, brunneis.

Long. corp. 4 mill.; expans. alar. 5 mill.

Exemplar unicum. In Mus. nostro.

Latreille, in his Genera Crustaceorum et Insectorum (tom. iv. p. 77, 1809), describes the genus *Nitela* as having the habitus of a *Tachybulus* (which he afterwards identifies with the genus *Pison* of *Spinola*, in his Addenda, p. 387), and the wings of a *Trypoxylon*, the marginal cell being however somewhat appendiculated in *Nitela*.

In the present genus the venation of the wings approximates to that of *Pison*, the second submarginal cell being strongly petiolated and receiving both recurrents, the first of these near the base, and the second rather beyond the middle of the cell; but, as Shuckard has pointed out in *Pison* (Trans. Ent. Soc. Lond. vol. ii.

p. 74), "there is great specific diversity in the form and size of the second submarginal petiolated cell, as well as in the mode of its receiving the recurrent nervures; which are sometimes interstitial, inosculating with the transverse cubital nervures, and sometimes received within it," as in *Niteliopsis;* while in his subgenus *Pisonitus,* "the first recurrent nervure is received towards the apex of the *first* submarginal cell, and the second recurrent about the middle of the *second* submarginal cell" (l. c. p. 79).

The antennæ however in *Niteliopsis* correspond with those of *Nitela,* having the second, third and following joints co-equal; whereas in *Pison* the second joint is considerably shorter than the third. In *Pison* also the eyes are emarginate, but in *Niteliopsis,* as in *Nitela,* entire. The maxillary and labial palpi also closely correspond in these latter; but the mandibles in *Niteliopsis* are simple as in *Pison,* and not bidentate at the apex, as those of *Nitela.*

Thus this genus would seem to form a connecting link between *Pison* on the one hand and *Nitela* on the other; whose affinities, in conjunction with *Trypoxylon,* had been recognized by Latreille as aforesaid; although later writers have removed the genus *Pison* from these cognate types, some to the *Nyssonidæ* and others to the *Larridæ.*

The pupa-cases of *Niteliopsis* are of light clay-coloured material, elongo-ovate, rugose and somewhat brittle; they are packed promiscuously amid a quantity of loose refuse of all kinds brought from without, and the gallery has no cellular separations.

Those of *Nitela* are smooth, of a dull carneous tinge, darkening towards the anal extremity; they are loosely placed in separate recesses of the pith, but, so far as I have noticed, in no regular series. Dr. Giraud, however, considers their presence in briars as exceptional, stating that they are more frequently to be met with in the trunks and branches of decayed trees, although he had also found their pupa-cases (which he accurately describes*) occupying four consecutive cells in a briar from Fontainebleau.

The transformations of *Trypoxylon* have been carefully recorded by Messrs. Dufour and Perris in an interesting Mémoire on the Hymenopterous insects reared from briars,

* Ann. Soc. Ent. Fr. 4e série, tome vi. p. 474. 1866.

published in the Annales of the Entomological Society of France.*

The *Pison Jurinei* of Southern Europe also provides for its progeny in briar-stems, where I have found them in the pseudo-pupa state, as follows:—

Pison Jurinei, Spin.

Alyson ater, Spin. Ins. Ligur. tom. ii. fasc. 4, p. 253.
Pison Jurinei, ibid., p. 256.

Pupa-cases griseous, rugose, ovate, somewhat brittle, in serial sequence without intermediate divisions, but partially connected together and with the excavated gallery by a scarcely perceptible web corresponding with the puparia themselves.

On opening one of these cases I found a broad pale-stramineous curved pseudo-pupa, having the segments strongly incised, with the head closely bent down to the centre of the body, where firmly retained and motionless.

The briar in which these puparia were found was completely excavated to the depth of nine or ten inches, presenting six of the aforesaid dusky cinereous cases smaller than the gallery itself, but adhering thereto; one close to the bottom; two contiguous to each other after the interval of an inch; two more also close together an inch above these; and the sixth half an inch higher. Above these cells was a thin transverse mud partition, but not at the extreme top. The puparia, which were similar at each end, measured about 8 mill. in length by 3 mill. in diameter.

From the shores of the Ambracian Gulf, near Prevesa The perfect insects appear towards the end of June or in July.

Fam. CHALCIDIDÆ.

Genus Halticella, Wlk.

Walker, Notes on Chalcid: Part 3, p. 39, 1871; Sichel, Ann. Soc. Ent. Fr. 4e série, tome 5, p. 347, 1866. (*Hocheria*, De Lap.)

Caput inerme, muticum.
Abdominis petiolus subnullus.

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* Ann. Soc. Ent. Fr. 1e série, tome ix. p. 28, 12, tab. 3, fig. 37—41. 1840.

Antennæ prope os insertæ.
Tibiarum posticarum apex non acuminatus.
Metatarsi graciles.

Halticella Osmicida, n. s.

Fem. Nigra; abdominis segmentibus 1o, 2o, 3o, 4o-que (hoc margine excluso), femoribusque posticis, rufis.

Caput transversum, densissimè punctatum, thoracis latitudine; oculi magni, distantes, prominuli; antennæ nigræ, 10-articulatæ, thoracis ferè longitudine, articulo basali elongato, depresso, secundo brevi, reliquis subæqualibus; thorax crassè punctatus, pilis albidis compressis instructus; abdomen conicum, articulis quatuor basalibus lucentibus rufis, quarto margine obscuro, reliquis nigris, pilis albidis compressis instructis; terebrâ brevi, nigrâ; alæ fumatæ, basi pellucidæ, venis fuliginosis; pedes obscuri, tibiis nigro-albescentibus, femoribus posticis valdè incrassatis, posticè subemarginatis, unidentatis, rufis.

Long. corp. (cum terebrâ) 10 mill.; exp. alar. 12 mill.

Mas, penitus niger, abdomine nitente, alis minus obscuris, basi pellucidis.

Long. corp. 8 mill.; exp. alar. 12 mill.

Hab.—Epirus, in rubis exsiccatis.

This parasite feeds on the adult larvæ of *Osmia tridentata* within their closed pupa-cases, the said larvæ becoming reduced thereby to an empty desiccated blackened shell of the same shape and dimensions as before, within which these *Halticellæ*, each occupying the interior of a single larva, undergo their metamorphoses, having the head directed towards the broad anal segments of the larvæ, thus pointing downwards in the briar cells, and issuing therefrom in the imago state about the middle of June.

Larva: milk-white, slightly recurved, gradually tapering towards each end, the anal extremity smaller than head; divisions of segments strongly arched and deeply incised, having large intermediate dorsal folds, so that for each ventral and lateral division there appear to be two dorsal folds, gradually sloping off on each side.

Length 10—11 mill.; breadth 3—4 mill.

XVII. *List of the species of* Galeodides, *with description of a new species in the collection of the British Museum.* By A. G. Butler, F.L.S., F.Z.S.

[Read 7th July, 1873.]

An elaborate Memoir on this group was published by M. Leon Dufour, in the Mémoires de l'Académie des Sciences, vol. xvii. pp. 338—446, Paris, 1862, illustrated by four plates: in this paper the author gave a list (without references) of most of the species previously described, and conscientiously worked out the structure, both external and internal, of all the species known to him, from Algeria; he characterized several new forms, of which he gave careful figures.

1. Mandibles of *R. imparida* ?
2. „ „ *G. orientalis.*
3. „ „ *G. Bengalensis.*
3*a*. Hind leg, with lamellæ.
3*b*. The species, natural size.

In his remarks upon the genus, M. Dufour dissented from Herr Koch as to the value of the tarsal joints as generic characters, and therefore applied the name *Galeodes* to the whole of the species; he observed that the character by which Koch separated the genus *Rhax* was fallacious, there being two claws to all the tarsi: now

Koch's diagnosis runs as follows:—"The tarsi of all the legs inarticulate; the tarsal joint short, the terminal joint of the palpi hidden."

M. Dufour characterized the two species *Rhax melanus* and *R. phalangista* thus:—"all the tarsi with two joints;" this character, although it does not agree with that given by Koch, certainly favours the latter author's view of the importance of tarsal characters for the subdivision of the *Galeodidæ;* M. Dufour also characterized *G. brunnipes* and *G. quadrigerus* thus,—"posterior tarsi with eight joints, intermediate tarsi with six joints:" and *G. nigripalpis*—"posterior tarsi with eight joints, intermediate tarsi with five joints:" and he believed that if Koch had known of these species, he would not have attempted to subdivide the *Galeodidæ* as he did.

It appears to me that in a group so extensive as *Galeodes*, and comprising species so similar to one another in external appearance, it is exceedingly desirable to take advantage of any constant structural characters for the formation of genera, and so to reduce as much as possible the labour of determining the species: that this was Koch's view also appears evident from the number of genera which he formed in his "Arachniden," some of them indeed founded upon characters too slight to be of value; I think, therefore, that had he known the species described by M. Dufour, and seen them to be distinct in structure from *Rhax*, *Aellopus*, *Solpuga*, *Galeodes*, and *Gluvia*, he would in all probability have added one or two genera for their reception, and I think he would have been perfectly justified in so doing.

That *Rhax* is a good genus (whatever may be the value of the others) I have no doubt whatever; not only is the group distinct to the eye, but the tarsi (according to M. Dufour) differ in their articulations, and the mandibles are distinguished by an entirely different character of dentition; this difference has never before been so well illustrated as on M. Dufour's plates, and I consider it a highly important one, as being easily seen, even in dried specimens.

In the present paper I shall adopt provisionally the whole of Koch's genera, believing, as I do, that they will eventually be adopted without hesitation, and fully satisfied that *Rhax*, at any rate, will always be considered a good and well-marked genus.

RHAX, *Hermann.*

" All the tarsi with two joints."*—*Dufour.*

" The tarsal joint short; the terminal joint of the palpi hidden."—*Koch.*

Mandibles short, exceedingly strong, upper mandible much longer than lower, with strong, obtuse, conical teeth; lower mandible gradually widened from its base to beyond the middle of its upper surface, and then abruptly narrowing; thus producing a very powerful oblique tooth.

1. Rhax furiosa.

Rhax furiosa, Koch, Arch. Naturg. viii. 1, p. 354, n. 2 (1842); Arachn. 15, p. 91; pl. 530, fig. 1480 (1848).

Arabia, *Koch.*

2. Rhax brevipes.

Galeodes brevipes, Gervais, Brit. Mus. 1842; Soc. phil. de Paris, Journ. l'Institut, p. 72 (1842).

Solpuga brevipes, Gervais, Apt. 3, p. 87, n. 1 (1844).

Nepal, *Hardwicke.* Type. B.M.

3. Rhax melana.

Galeodes melanus, Olivier, Voy. dans l'Emp. Ottom. 3, p. 443, pl. 42, fig. 5; Savigny, Égypte, Arachn. pl. 8, f. 9; Koch, Arachn. 15, pl. 530, fig. 1481 (1848); Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 438 (1862).

Solpuga melana, Gervais, Apt. 3, p. 87, n. 2 (1844).

Maballah, *Dr. A. Smith.* B.M.

4. Rhax phalangista.

Solpuga phalangista, Gervais, Apt. 3, p. 87, n. 3 (1844). Savigny, Égypte, Arachn. pl. 8, fig. 10; Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 388, n. 6; pl. 1, fig. 4, mandib. (1862).

Baths of Tiberias, Palestine, *M. Gisborne.* B.M.

5. Rhax impavida. p. 415, fig. 1, mandibles.

Rhax impavida, Koch, Arch. Naturg. viii. 1, p. 354, n. 3 (1842); Arachn. 15, p. 94; pl. 530, fig. 1482 (1848).

Arabia, *Koch*; sp. cad.? E. India. B.M.

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* This is correct, and Koch is consequently wrong.

Aellopus, *Koch.*

"The tarsi of the three hinder pairs of legs with two joints. (The hindermost without claws)."—*Koch.*

1. Aellopus lunata.
   Aellopus lunata, Koch, Arch. Naturg. viii. 1, p. 354, n. 1 (1842); Arachn. 15, p. 102; pl. 533, fig. 1489 (1848).
   Cape of Good Hope, *Koch.*

Galeodes, *Olivier.*

"The tarsi of the second and third pairs of legs with two, those of the last pair with three joints."—*Koch.*

1. Galeodes Arabs.
   Galeodes Arabs, Koch, Arch. Naturg. viii. 1, p. 353, n. 4 (1842); Arachn. 15, p. 85, pl. 528, fig. 1476 (1848).
   Solpuga araneoides, Savigny, Aran. d'Égypte, 416, pl. 8, fig. 7.
   Arabia, Egypt, *Koch;* Baghdad. B.M.

2. Galeodes Græcus.
   Galeodes Græcus, Koch, Arch. Naturg. viii. 1, p. 353, n. 3 (1842).
   Galeodes araneoides, Hahn, Arachn. iii. p. 7, pls. 73, 74 (1836).
   Greece and Siberia, *Koch;* sp. cad.? Turkey. B.M.

3. Galeodes Persicus.
   Solpuga Persica, Herbst and Lichtenstein, Natursyst. des Ungeflügelten Insecten, p. 35 (1797).
   Persia.
   I am not aware that anyone has identified this species. I suspect it to be identical with *G. Græcus.*

4. Galeodes araneoides.
   Phalangium araneoides, Pallas, Spic. Zool. fasc. ix. p. 37, figs. 7—9.
   Galeodes araneoides, Olivier, Enc. méth. vi. p. 580; Koch, Arachn. 15, pl. 528, fig. 1475 (1848).
   Solpuga araneoides, Fabricius, Ent. Syst. Suppl. p. 294.
   Solpuga arachnodes, Herbst and Lichtenstein,

Natursyst. des Ungeflügelten Insecten, p. 37, pl. 4, fig. 2.
Red Sea; Cape of Good Hope. B.M.

5. Galeodes Bengalensis, n. sp. p. 415, figs. 3, 3*a*, 3*b*.
Allied to *G. araneoides* and *fatalis*, but with the head and mandibles comparatively larger than in either, the cephalothorax broader in front and narrower behind, the legs thicker.
Colours: testaceous, the mandibles castaneous, becoming black at the tips.
Toothing of mandibles: upper, seven short and three long teeth, thus: ∪∪–∪–∪–∪∪∪; lower, two long and two short, thus: –∪∪–;* the arrangement in *G. fatalis* is –∪–∪∪–∪∪∪ in the upper mandible, the lower being –∪∪– as in the present species. Length of body, including mandibles, 1 inch 4 lines.
Bengal, *W. Masters*. 1 specimen. B.M.

6. Galeodes fatalis.
Solpuga fatalis, Herbst and Lichtenstein, Natursyst. des Ungeflügelten Inseckten, p. 32, pl. 1, fig. 1 (1797).
Bengal; India? B.M.

7. Galeodes orientalis. p. 415, fig. 2, mandibles.
Galeodes orientalis, Stoliczka, Journ. Asiat. Soc. Bengal, 38, 2, p. 209, pl. 18, figs. 4 and 5 (1868).
Bengal, *Stoliczka;* Madras. B.M.

8. Galeodes gryllipes.
Galeodes gryllipes, Gervais, Soc. phil. de Paris, in Journ. l'Inst. p. 72 (1842).
Solpuga gryllipes, Gervais, Apt. 3, p. 91, n. 14 (1844).
"Martinique," Gervais, sp. ead.? B.M.
The type appears to be in the British Museum collection; if so, it must be the species to which I have referred the above name; it is not, however, labelled by Gervais, and no locality is attached to it.

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* I am compelled to use these signs to indicate the relative lengths of the teeth, as I know of no others that can be substituted for them.

9. Galeodes scalaris.
Galeodes scalaris, Koch, Arch. Naturg. viii. 1, p. 353, n. 5 (1842); Arachn. 15, p. 87, pl. 529, fig. 1477 (1848).
Arabia, *Koch*; — ? B.M.

10. Galeodes leucophæus.
Galeodes leucophæus, Koch, Arch. Naturg. viii. 1, p. 354, n. 7 (1842); Arachn. 15, p. 88, pl. 529, fig. 1478 (1848).
Arabia, *Koch*.

11. Galeodes barbarus.
♂ *Galeodes barbarus*, Lucas, Hist. Nat. des Artic. de l'Algérie, 1, p. 270, pl. xviii. fig. 7 (1849); ♀ Dufour, Ann. Soc. Ent. France, S. 3, p. 1, pl. 3, fig. 1 (1852); Mém. de l'Acad. Sci. Paris, 17, p. 379, n. 1, pl. 1, fig. 1 (1862).
Algeria.

12. Galeodes Lucasii.
Galeodes Lucasii, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 385, n. 4; pl. 2, fig. 5, ♀ (1862).
Southern Algeria.

13. Galeodes? curtipes.
Galeodes curtipes, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 439, pl. 3, fig. A. ♀ (1862).
Algeria.

14. Galeodes intrepidus.
Solpuga intrepida, Gervais, Apt. 3, p. 89, n. 9, pl. 27, fig. 1 (1844); Savigny, Égypte, Arachn. pl. 8, fig. 10; Koch, Arachn. 15, pl. 529, fig. 1479 (1848); Dufour, Mém. de l'Acad. Sci. Paris, p. 382, n. 3, pl. 1, fig. 3, ♀ (1862).
Hab. — ? B.M.

15. Galeodes furcillatus.
Galeodes furcillatus, Simon, Ann. Soc. Ent. France, 5 Ser. tome 2, p. 264, n. 2 (1872).
Isle of Cyprus.
Differs from all the known species in the bifurcation of the upper mandible; in other respects it resembles the larger species of the genus (*G. araneoides* and *Arabs*).

16. Galeodes Syriacus.

Galeodes Syriacus, Simon, Ann. Soc. Ent. France, 5 Ser. tome 2, p. 261, n. 1 (1872).

Syria.

Very close to *G. dorsalis*, with which the species is compared throughout the description; unfortunately *G. dorsalis* does not exist in the collection, and therefore I have been unable to tell whether or no we possess M. Simon's species: ? is *G. dorsalis* a described species.

SOLPUGA, *Lichtenstein.*

"The tarsi of the second and third pairs of legs with four, those of the last pair with seven joints (the longer basal joint following the tibia not reckoned)."—*Koch.*

1. Solpuga lethalis.

Solpuga lethalis, Koch, Arch. Naturg. viii. 1, p. 352, n. 1 (1842); Arachn. 15, p. 70; pl. 524, fig. 1465 (1848).

S. Africa; Congo. B.M.

2. Solpuga lineata.

Solpuga lineata, Koch, Arch, Naturg. viii. 1, p. 353, n. 3 (1842); Arachn. 15, p. 80; pl. 527, fig. 1473 (1848).

Cape of Good Hope.

3. Solpuga rufescens.

Solpuga rufescens, Koch, Arch. Naturg. viii. 1, p. 352, n. 2 (1842); Arachn. 15, p. 72, pl. 524, fig. 1466 (1848).

Galeodes hostilis, White, App. Methuen's Life in the Wilderness, p. 317, pl. 2, fig. 5 (1846).

Cape of Good Hope, *Koch;* S. Africa, *Pearson.* B.M.

4. Solpuga jubata.

Solpuga jubata, Koch, Arch. Naturg. viii. 1, p. 352, n. 3 (1842); Arachn. 15, p. 73, pl. 525, fig. 1467 (1848).

Cape of Good Hope, *Koch;* sp. ead.? Interior of S. Africa. B.M.

5. Solpuga vincta.

Solpuga vincta, Koch, Arch. Naturg. viii. 1, p. 352, n. 4 (1842); Arachn. 15, p. 74, pl. 525, fig. 1468 (1848).

Cape of Good Hope, *Koch.*

6. Solpuga badia.
Solpuga badia, Koch, Arch. Naturg. viii. 1, p. 352, n. 5 (1842); Arachn. 15, p. 75; pl. 526, fig. 1469 (1848).
Cape of Good Hope, *Koch;* Port Natal. B.M.

7. Solpuga fusca.
Solpuga fusca, Koch, Arch. Naturg. viii. 1, p. 352, n. 6 (1842); Arachn. 15, p. 76; pl. 526, fig. 1470 (1848).
Cape of Good Hope, *Koch.*

8. Solpuga hirtuosa.
Solpuga hirtuosa, Koch, Arch. Naturg. viii. 1, p. 352, n. 7 (1842); Arachn., 15, p. 78; pl. 526, fig. 1471 (1848).
Cape of Good Hope, *Koch.*

9. Solpuga flavescens.
Solpuga flavescens, Koch, Arch. Naturg. viii. 1, p. 353, n. 8 (1842); Arachn. 15, p. 79; pl. 527, fig. 1472 (1848).
Egypt, *Koch;* sp. ead. ? S. Africa. B.M.

10. Solpuga lateralis.
Solpuga lateralis, Koch, Arch. Naturg. viii. 1, p. 353, n. 10 (1842); Arachn. 15, p. 82; pl. 527, fig. 1474 (1848).
Cape of Good Hope.

11. Solpuga chelicornis.
Solpuga chelicornis, Herbst. and Lichtenstein, Natursyst. des Ungeflügelten Insecten, p. 40, pl. 2, fig. 1.
Phalangium araneoides, Fabricius, Ent. emend. ii. p. 431, n. 9.
Galeodes setifer, Olivier, cit. Gervais, Apt. 3, p. 89 (1844).
S. Africa. B.M.

12. Solpuga scenica.
Solpuga scenica, Gervais, Apt. 3, p. 89, n. 10 (1844).
Solifuga Sardis, Cetti, Nat. Hist. Sard. iii. p. 55.
Greece, Crete, ? Naples, &c.

13. Solpuga tarda.

Solpuga tarda, Herbst and Lichtenstein, Natursyst. des Ungeflügelten Insecten, p. 50 (1797).

Greece, Sardinia and Naples.

According to Herbst and Gervais, perhaps the ♀ of *S. scenica*.

14. Solpuga ochropus.

Galeodes ochropus, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 437 ; pl. 3, fig. B ♂ (1862).

Algeria, *Dufour ;* Spain. B.M.

15. Solpuga? Dastuguei.

Galeodes Dastuguei, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 382, n. 2 ; pl. 1, fig. 2 (1862).

"Algeria, Sahara, Boghar," *Dufour;* sp. ead.? Algeria. B.M.

We have a small and much shrivelled example from Algeria of what I suspect to be a young example of this species.

16. Solpuga brunnipes.

Galeodes brunnipes, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 389, n. 7 ; pl. 2, fig. 6 (1862).

"Posterior tarsi with eight joints, intermediate tarsi with six joints."—*Dufour.**

"South Algeria, Boghar," *Dufour;* sp. ead.? Algeria. B.M.

17. Solpuga quadrigerus.

Galeodes quadrigerus, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 391, n. 8 ; pl. 2, fig. 7 (1862).

"S. Algeria, Boghar," *Dufour.*

18. Solpuga nigripalpis.

Galeodes nigripalpis, Dufour, Mém. de l'Acad. Sci. Paris, 17, p. 391, n. 9 ; pl. 2, fig. 8 (1862).

"Posterior tarsi with eight joints, intermediate tarsi with five joints."—*Dufour.*

S. Africana of Herbst and Lichtenstein looks like a manufactured species ; it certainly can have nothing to do with the genus, to judge by the figure.

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* In our example of a species agreeing closely with M. Dufour's figure of *D. brunnipes*, I can only find the same number of tarsal joints as in Koch's *Solpuga*.

Gluvia, *Koch*.

"The tarsi of all the legs without division into joints, the tarsal joint thin and long; the terminal joint of the palpi free and distinct."—*Koch*.

1. Gluvia spinipalpis.
   Galeodes spinipalpis, Latreille in Guérin's Icon. Règne Anim. Arachn. pl. 5, f. 4.
   Solpuga spinipalpis, Gervais, Apt. 3, p. 90, n. 12 (1844).
   S. America.

2. Gluvia geniculata.
   Gluvia geniculata, Koch, Arch. Naturg. viii. 1, p. 355, n. 5 (1842); Arachn. 15, p. 98; pl. 532, fig. 1486 (1848).
   Near the Orinoco, *Koch*; Guyaquil. B.M.

3. Gluvia variegata.
   Galeodes variegata, Gervais, Gay's Fauna Chilena, Aracn. p. 15, n. 1; p. 1, fig. 2 (1849).
   Chili.

4. Gluvia morsicans.
   Galeodes morsicans, Gervais, Gay's Fauna Chilena, Aracn. p. 16, n. 2; pl. 1, fig. 3 (1849).
   Chili.

5. Gluvia limbata.
   Galeodes limbata, Lucas, Mag. de Zool. viii. pl. 5 (1835).
   Solpuga limbata, Gervais, Apt. 3, p. 90, n. 14 (1844).
   ? *Gluvia formicaria*, Koch, Arch. Naturg. viii. 1, p. 355, n. 6 (1842); Arachn. 15, p. 99; pl. 532, fig. 1487 (1848).
   "Mexico," *Lucas*. Jamaica. B.M.

6. Gluvia gracilis.
   Gluvia gracilis, Koch, Arch. Naturg. viii. 1, p. 355, n. 4 (1842); Arachn. 15, p. 97; pl. 531, fig. 1485 (1848).
   Columbia, *Koch*; Mexico. B.M.

7. Gluvia cinerascens.
   Gluvia cinerascens, Koch, Arch. Naturg. viii. 1, p. 355, n. 3 (1842); Arachn. 15, p. 96, pl. 531, fig. 1484 (1848).
   Mexico. B.M.

8. Gluvia præcox.
   Gluvia præcox, Koch, Arch. Naturg. viii. 1, p. 355, n. 1 (1842); Arachn. 15, p. 95; pl. 531, fig. 1483 (1848).
   Mexico, *Koch.*

9. Gluvia elongata.
   Gluvia elongata, Koch, Arch. Naturg. 15, p. 355, n. 2 (1842).
   Mexico, *Koch.*

10. Gluvia Cubæ.
   Galeodes Cubæ, Lucas, Mag. de Zool. viii. pl. 11 (1835).
   Solpuga Cubæ, Gervais, Apt. 3, p. 90, n. 13 (1844).
   Cuba.

11. Gluvia striolata.
   Gluvia striolata, Koch, Arch. Naturg. viii. 1, p. 356, n. 7 (1842); Arachn. 15, p. 101; pl. 532, fig. 1488 (1848).
   Portugal, *Koch.*

12. Gluvia minima.
   Gluvia minima, Koch, Rosenbauer's Thiere Andalusiens, p. 410 (1856).
   Andalusia.

XVIII. *On the Genera of the* Cossonidæ.

By T. Vernon Wollaston, M.A., F.L.S.

[Read 2nd June, 1873.]

Having determined during the past winter to examine critically the structural characters of the various genera of the *Cossonidæ* (so far as accessible) which have hitherto been published, I soon perceived that a very small proportion of the numerous species which were submitted to me could by any possibility be embraced by the 29 groups which were acknowledged by Lacordaire, and which have been admitted subsequently (with two or three additions) into the Munich catalogue. And moreover the excessive inaccuracy of the greater number of the diagnoses, as given by Lacordaire (—for which however he was not himself responsible, they having simply been epitomized, at times perhaps somewhat in haste, from the different authors by whom they were originally compiled), made it but too evident that, in order to define them aright, no *asserted* peculiarity could be trusted as necessarily true, but that every single feature would have to be collated afresh, and on an independent basis. This being the case, it will at once be seen that my object in the present memoir has *not* been to *monograph the species;* and therefore in two or three extensive and well-established genera, such as *Cossonus* and *Rhyncolus*, I have been content to select a few types, from distant parts of the world, and to treat them as representing their respective groups. Yet this very method of proceeding has involved the necessity of examining at any rate *certain* species with the utmost care; and as an accurate list of these will be found at the close of my paper, it follows that the members of the family which are there catalogued (amounting to 253) may be looked upon as arranged systematically *in accordance with my own views.*

At the same time I would not intend to imply that no *other* representatives of the groups which are more par-

ticularly extensive have been carefully overhauled,—for amongst the *Cossoni*, for instance, a very large number have passed under my eye; but since I am not desirous of undertaking to determine critically their exact specific titles (which would be rather the work of a separate monograph), I have thought it safer to leave them *unnoticed* in my general list,—lest a possible misquotation of the names might result in confusion as regards the nomenclature.

To those Coleopterists who have granted me the loan of their specimens, in this somewhat difficult task, I would desire to return my warmest thanks. To Mr. Pascoe and Mr. Fry my acknowledgments are especially due,—both of whom have, with characteristic liberality, placed their large and valuable Cossonideous collections at my entire disposal. It is indeed to the former that I am indebted for many of the most remarkable types which I have been thus enabled to examine,—his series including, in addition to some curious modifications from Australia, a large proportion of the species which were obtained by Mr. Wallace in the islands of the Malayan Archipelago; whilst the rich material of Mr. Fry in the number of its South-American forms stands probably unrivalled. To Mr. Janson also I must express my peculiar obligations, the whole of his examples having been generously entrusted to me without reserve; and my worthy friend John Gray, Esq., and Dr. Sharp have likewise afforded much valuable aid in communicating all the members of the family that they respectively possess. The former in fact owns the most complete set of *European* Cossonids with which I am acquainted; whilst the latter has contributed, amongst numerous other genera (many of which had been transmitted, lately, by Mr. Lawson, from New Zealand), the very rare and minute *Alaocyba carinulata* of Mediterranean latitudes. M. Roelofs, also, of Brussels, has had the kindness to send for inspection his unique type of the *Georrhynchus Mortetii*, from Monte Video; and I need not here allude again to the interesting material, amassed in Japan, of which Mr. G. Lewis has granted me the loan,—it having formed the subject for a separate enumeration in a late Number of the Entomological Society's Transactions.

As regards the method of arrangement, it has been my endeavour to arrive, so far as is possible, at a natural one. Had I been content to adopt a purely artificial plan, the

various generic characters might have been more easily, and *completely*, tabulated; but since in that case a considerable number of groups which I am satisfied have no real affinity with each other would have been brought into juxta-position, I have preferred to sacrifice even *convenience in identification* to the more important principle of a correct adjustment of the several types.* On this account it is, that while acknowledging the exact number of the funiculus-joints as of primary signification, I have not allowed it to over-ride (in a few exceptional instances) a combination of other features which more than counterbalance it in structural importance; and hence amongst the true *Cossonides*, in which that organ is essentially 7-articulate, I have admitted one genus (*Tetracoptus*) in which the funiculus is composed of four joints, two (*Pentamimus* and *Tomolips*) in which it is made-up of five, and one (*Hexarthrum*) in which it consists of six,—for it would be simply preposterous to include the first of these amongst the *Dryophthorides* (with which in other respects it has absolutely nothing in common), and the second and third amongst the *Pentarthrides*, or to associate the fourth (which belongs to the sub-Hylastideous, asperated types) with the anomalous and more or less fossorial *Onycholipides*—in which the body is pallid and somewhat hairy, the tibial hook obsolete, and the tarsi strictly tetramerous. Moreover Lacordaire has himself acknowledged this principle by placing *Hexarthrum* in the same situation as I have done, namely towards the close of the subfamily *Cossonides;* and it is a method indeed which is acted upon, more or less, in nearly every department of the Coleoptera.

With respect to the singular cluster of forms which I have brought together under the *Onycholipides*, they might well be supposed, if viewed *per se*, to pertain to some totally distinct (and perhaps as yet undefined) family of the *Rhynchophora;* but they are nevertheless so unmistakeably connected on the one hand, by means of *Halorhynchus* and *Pentatemnus*, with the *Pentarthrides*, and on the

* Finding it next to impossible in the subfamily *Cossonides* to *tabulate* the characters of more than a small number of the very numerous genera (whilst, at the same time, adhering to what I believe to be the *natural sequence* of the latter), I have, instead, and as a slight assistance towards the identification, noted a few diagnostic features of each successive group; and, as a still further aid to the eye, I have cited the particular country to which the several genera are peculiar, or in which they more especially predominate.

other, through *Alaocyba*, *Lipommata*, and *Styphloderes*, with the *Cossonides* proper, that it is well-nigh impossible to doubt (despite their subfossorial habits, 6-jointed funiculus, quadriarticulate feet, obsolete tibial hook, and other eccentricities) that the present family is their natural location.

Although dissenting from the views of Lacordaire, in recognizing no particular department which is characterized *par excellence*, like his *Lymantides*, by the shortness of the metasternum (for there is scarcely a single item of the structure which varies more, according to the exact *genus*, and sometimes even according to the *species*, than the latter), I have nevertheless not departed greatly from the method of arrangement which was adopted by him ; and if there could have been any doubt that the *Dryophthorides* constitute an integral portion of the family, it would be completely dispelled by the existence of such links as *Chærorrhinus* and *Pentacoptus* (the former of which, indeed, although, like the latter, manifestly Pentarthrideous, has actually been cited hitherto, through an unpardonable error in its original diagnosis, as a Dryophthorid) and still more by that wonderful genus *Synommatus*, from Borneo, —the distinctive peculiarities of which are so evenly balanced between those of the *Dryophthorides* and *Pentarthrides* that it is by no means easy to decide into which of the two subfamilies it should be received.

There are six genera, however, of those hitherto published, which I have not been able to procure for examination ; and these therefore (having convinced myself by experience that recorded characters are seldom completely to be trusted) I am compelled to leave in doubt,—merely placing their names between brackets (not altogether unaccompanied by a few remarks, gleaned from their respective diagnoses) in order to indicate the several positions which it seems to me not unlikely that they will be found to occupy. The genera to which I allude are as follows :— *Lymantes* (from North America), *Aparoprion* (from the south of Europe), *Oodemas* (from Tahiti), *Mimus* (from Southern Africa), *Porthetes* (likewise South-African), and *Proëces* (from Madagascar).

Of the twenty-nine groups acknowledged by Lacordaire, I have rejected *Phænomerus*,—being satisfied that it is not truly a member of the *Cossonidæ*. Its general facies and considerably developed prosternum bespeak, I cannot but think, a much nearer relationship with the *Sphadas-*

mides and *Mecopus;* and although the breast is *not* channelled for the reception of the rostrum, some of the species nevertheless have a faint *tendency* for the slight pectoral cavity which is very appreciable in *Sphadasmus*, *Mecopus*, &c., and which implies at all events an exceedingly different *situation*, in a natural system, to that which is occupied by the Cossonids. Moreover, the large and robust spine with which its intermediate tibiæ are furnished towards their external apex is quite without precedent in the present family, and I have had no hesitation therefore in expunging the genus from our list.

Glancing at the 122 genera embodied in this paper (75 of which have been treated as new), there are one or two points to which it may be worth while to draw attention. Thus, the only groups, outside the anomalous subfamilies *Notiomimetides* and *Onycholipides*, in which the tibial hook (that almost universal appendage) is obsolete, are *Thaumastophasis*, *Aorus*, *Lipancylus*, and *Xenocnema* (though in *Homaloxenus* it is greatly reduced in dimensions). And we might perhaps add *Amorphocerus* to the number, were it not that the tibiæ in that genus are eminently *spinose* at their apex; and it may be a question how far the largest of the terminal spines, although *not* proceeding from the outer angle, represents the tibial *uncus*. Another feature which might be noted, and which certainly is *not* in accordance with what I had originally imagined, is the excessive rarity of anything approaching to a *dentate* structure of the femora. The only group indeed, *the truly Cossonideous affinities of which are beyond a question*, in which it is, so far as I am aware, indicated, is *Odontomesites;* and even there the tooth is but obtuse and anguliform, and exists only in the male sex. It is however more strongly expressed in *Notiomimetes*, *Coptorhamphus* and *Homaloxenus*,—all of which, nevertheless, are, in other respects likewise, abnormal, their right of location in the present family being possibly open to dispute. The third peculiarity, concerning which I would say a few words, is more superficial, and yet, as a mere aid in the identification, it is practically of considerable importance: I refer to the extreme scarcity of *metallic tints* which is observable amongst the Cossonids. A brassy lustre, sometimes merging into green, is almost the only one of which I am cognizant, and even that is remarkably uncommon. It is conspicuous however (albeit subject to complete obliteration) in *Lamprochrus* and

Acanthomerus, from St. Helena, in some of the Madeiran *Caulotrupides*, and in *Oodemas*, from the Sandwich Islands,—a genus which I have not been able to procure for inspection. We see it also, though much less powerfully indicated, in the *Sericotrogus subœnescens* from New Zealand, and in certain of the *Phlœophagi*,—as, for instance, the European *P. æneopiceus;* and it is about equally traceable in the *Pseudophlœophagus tenax*, of the Madeiran and Azorean archipelagos. Except in these particular instances I have no evidence of its existence; for in the *Pachystylus dimidiatus*, from Chili, as well as in two *Pentarthra* from the same region, it is so excessively faint as to be hardly even recognizable. But what I should regard as far more significant, in a systematic point of view, is the occasional *obsoleteness*, or even total absence, of the scutellum,—for in by far the greater number of the Cossonids that organ is (in proportion to their size) largely expressed. In the small subfamilies however of *Notiomimetides* and *Dryopthorides*, as well as in 13 genera of the *Pentarthrides*, 2 of the *Onycholipides*, and 10 of the true *Cossonides* (making 30 groups in all, out of the 122), it is either altogether untraceable, or else so far reduced in dimensions as to be detected with difficulty; and it will be seen by a reference to my tabular synopsis that I have made use of this fact in locating the particular types to which it applies.

The curious instability which is indicated amongst the representatives of the present family, in the exact number of the funiculus joints, is more than paralleled by the occasional obliteration (whether wholly or in part) of the organs of sight. The only member however *of the true Cossonides* in which the eyes, so far as I am aware, are absent, is the *Lipommata calcaratum*,—a pilose, *Phlœophagus*-like Cossonid, of slightly burrowing propensities, which lives about the roots of sand-plants in the island of Porto Santo, of the Madeiran archipelago. But in the anomalous subfamily *Onycholipides*, no less than three genera (out of the four)—namely *Onycholips*, *Raymondionymus*, and *Alaocyba*—are totally blind; and the Australian *Halorhynchus*, which (although pertaining to the latter) is exactly osculant between the *Onycholipides* and *Pentarthrides*, is in a similar condition. And there are four other Pentarthrideous types—namely *Pentatemnus*, *Pseudomesoxenus*, *Amaurorrhinus*, and *Heteropsis*,—as well as the single exponent of the abnormal subfamily

Notiomimetides, in which the visual organs are so far reduced in dimensions, and so rudimentary in character, as to be emphatically *obsolete*.

Into the question of the geographical distribution I need not now enter, for a glance at the systematic catalogue will suffice to shew approximately what the ranges are of the several types. It is curious however to note how large a proportion of the latter, which have hitherto been brought to light, possess *insular* habitats; and, if we except the great and almost cosmopolitan genus *Cossonus*, it would seem as if *islands* afforded conditions more peculiarly favourable for the modes of life of the members of the present family. And this completely accords with my own experience in the sub-African archipelagos,—no island appearing to be too minute for the *modus vivendi* of the Cossonids. In the Maderian and Canarian groups there is scarcely any fact more distinctly observable,—where every detached rock is tenanted by some one representative, or more, of this particular department. Nor are trees and shrubs (which seldom flourish in localities thus weather-beaten and exposed) by any means essential for their support,—the pithy stems of the ordinary plants being amply sufficient to sustain them; and I have frequently found the stalks of dead Thistles and *Umbelliferæ* to be perforated through-and-through by their ravages. In our own country the Cossonids would seem to play a very insignificant part amongst the Coleopterous population, only nine members having hitherto been recorded; whereas at the Canaries (made up, as they are, of so many islands and islets) I have myself met with no less than fourteen, and at the Madeiras (which present a considerably smaller area) with nineteen; whilst even in the little island of St. Helena (the geographical base of which does not exceed that of the Isle of Wight) as many as fourteen have already been noted, and these I have good reason to suspect represent but an instalment of its whole Cossonideous fauna. The British members of our present family are as follows:—*Pentarthrum Huttoni*, Woll. (= *Rhyncolus Hervei*, Allard); *Phlœophagus spadix*, Hbst., and *æneopiceus*, Bohm.; *Rhopalomesites Tardii*, Curt.; *Cossonus ferrugineus*, Clairv.; *Rhyncolus ater*, Linn. (= *chloropus*, Fab.), *cylindrirostris*, Oliv. (= *lignarius*, Mshm.), and *gracilis*, Rosenh.; and *Stereocorynes truncorum*, Germ.

I will merely add that in treating the subject-matter of the present memoir, it has divided itself into five parts:—

(1) A catalogue of the several groups—arranged systematically, and (so far as I have been able whilst adhering to what I believe to be their natural sequence) *tabulated;*

(2) full generic diagnoses, taken *seriatim;*

(3) *observations* (diagnostic and geographical) on each separate genus;

(4) brief characters of 139 species which, so far as I am aware, have not hitherto been recorded; and

(5) a complete list of the particular members of the family (amounting, in all, to 253), *the structural and specific features of which I have examined with the greatest care,* and which may be regarded consequently as the *material* from which the paper has been compiled.

Enumeratio generum systematica.

Fam. COSSONIDÆ.

I. Funiculus 4-art. ..... *Notiomimetides.*

(*Corpus calvum, subnitidum; oculis obsoletis; coxis valde separatis; tibiis apice haud uncinatis; tarsis pseudotetrameris.*)

1. Notiomimetes .. .. *Australia.*

II. Funiculus 4-art. ..... *Dryophthorides.*

(*Corpus aut lutosum aut subvelutinum, opacum, rariss. subnitidum; oculis distinctis, demissis, transversis; coxis, presertim anticis, minus separatis; tibiis apice uncinatis; tarsis conspicue 5-art.is.*)

2. Psilodryophthorus .. .. *Nov. Guinea.*
3. Stenommatus .. .. *Mexico.*
4. Dryophthorus .. .. *Europa.*
5. Tetratemnus .. .. *ins. Japon.*

III. Funiculus 5-art. ..... *Pentarthrides.*

(*Tibiis apice uncinatis; tarsis pseudotetrameris.*)

a. *Oculi distincti.*

b. *Corpus lutosum; scutello haud, vel vix, observando.*

6. Synommatus .. .. *Borneo.*
7. Chærorrhinus .. .. *Europa.*
8. Pentacoptus .. .. *ins. Japon.*
9. Lyprodes .. .. *ins. Malayens.*

bb. *Corpus* (*in* Sericotrogo *et* Leptomimi *parte excepti*s) *calvum; scutello conspicuo.*

10. Phlœophagomorphus .. .. .. *Nov. Granada.*
11. Pseudopentarthrum .. .. .. *Mexico.*
12. Xenosomatium .. .. *ins. Malayens.*
13. Pentarthrum .. .. *tot. orb. terrar.*
14. Sericotrogus .. .. *Nov. Zealand.*
15. Stenotrupis .. .. *ins. Malay., et Antillæ.*

16. Microcossonus .. .. *Nov. Guinea.*
17. Cossonideus .. .. *Australia.*
18. Tychiodes .. .. *ins. Japon.*
19. Tychiosoma .. .. *ins. Philipp.*
20. Leptomimus .. .. *ins. Malayens.*

bbb. *Corpus calvum, vel rarius minute pubescens; scutello obsoleto.*

21. Lamprochrus .. .. *St. Helena.*
22. Acanthomerus .. .. *Id.*
23. Microxylobius .. .. *Id.*
24. Microtribus .. .. *Nov. Zealand.*
25. Mesoxenomorphus .. .. *Caffraria.*

aa. *Oculi obsoleti.*

c. *Scutellum distinctum.*

26. Heteropsis .. .. *Nov. Zealand.*

cc. *Scutellum obsoletum.*

27. Amaurorrhinus .. .. .. *ins. Atlant., Europa.*
28. Pseudomesoxenus .. .. *St. Helena.*
29. Pentatemnus .. .. *ins. Atlant.*

aaa. *Oculi nulli.*

30. Halorhynchus .. .. *Australia.*

IV. Funiculus 6-art..... *Onycholipides.*

(*Corpus pallidum, plus minus pilosum; metasterno brevi, interdum brevissimo; tibiis fossoriis, plus minus compressis ac ciliatis, apice haud uncinatis; tarsis vere* 4*-articulatis.*)

d. *Oculi distincti.*

31. Georrhynchus .. .. *Monte Video.*

dd. *Oculi nulli.*

e. *Rostrum breve, latum. Antennæ brevissimæ. Scutellum distinctum. Unguiculi nulli.*

32. Onycholips .. .. *ins. Canariens.*

ee. *Rostrum longius, gracilius. Antennæ longiores. Scutellum nullum. Unguiculi magni.*

33. Raymondionymus .. .. *Europa.*
34. Alaocyba .. .. *Id.*

V. Funiculus 7-art..... *Cossonides.*

In Tetracoptus (4-*art.*), *in* Pentamimus *et* Tomolips (5-*art.*), *et in* Hexarthrum (6-*art.*) *exceptis.*

(*Tibiis apice uncinatis, raris inarmatis; tarsis pseudotetrameris.*)

f. *Oculi nulli.*

35. Lipommata .. .. *ins. Maderens.*

ff. *Oculi distincti.*

g. *Scutellum aut nullum aut obsoletum.*

h. *Metasternum brevissimum.*

36. Styphloderes.. .. .. *Europa, Afr. bor.*
37. Cotaster .. .. *Europa.*
38. [Lymantes] .. .. *America bor.*
39. [Aparoprion] .. .. *Europa.*
40. [Oodemas] .. .. *ins. Sandwich.*

hh. *Metasternum breve.*

41. Caulotrupis .. .. *ins. Maderens.*
42. Phlœophagus .. .. .. *ins. Atlant., Europa.*

gg. *Scutellum plus minus conspicuum.*

i. *Corpus æneo-piceum.*

43. Pseudophlœophagus .. .. .. *ins. Atlant.*

ii. *Corpus nunquam æneo-tinctum.*

k. *unco tibiali obsoleto.* (*Oculi maximi.*)

44. Thanmastophasis .. .. *Australia.*

kk. *uneo tibiali* (*in* Amorphocero, Lipancylo, Aoro, *et* Xenocnema *exceptis*) *plus minus conspicuo.*

l. *oculis subinferioribus, superne vix observandis.*

m. *Corpus pubescens, piceum.*

45. Himatium .. .. *India.*

46. Pholidonotus .. .. *Borneo.*

47. Coptorhamphus .. .. *Java, Borneo.*

mm. *Corpus calvum, atrum.*

48. Aphanommata .. .. *ins. Cap. Verde.*

ll. *oculis superne conspicuis* (*vel lateralibus, vel subapproximatis*).

n. *coxis anterioribus plus minus separatis.*

o. *scapo brevissimo.* (*rostro subtriangulari.*)

49. Brachyscapus .. .. *Africa austr.*

oo. *scapo plus minus elongato, interdum brevi, nunquam brevissimo.*

(calvum, nitidum, sæpius atrum; rostr. interd. ante basin aut in medio subgibboso.

50. Phlœophagosoma). .. .. *ins. Orient.*

(setuloso-squamosum, angust., antice et postice acutum; oculis prominentibus.

51. Pholidoforus). .. .. *ins. Japon.*

(lutosum, fusif.; elytris costatis, apice recte truncat.; rostr. antice subatten.; ocul. demiss.

52. Coprodema). .. .. *ins. Japon.*

(fere ut in Coprodema, sed magis parall.; elytr. apice integris; tars. art.° 3^tio^ bilobo.

53. Exodema). .. .. *ins. Japon.*

(sublutos., minutiss. sericat., opacum, densiss. sculpt., nigrum; oculis valde prominent.

54. Melarhinus). .. .. *Madagascar.*

(calvum, fusif., opacum, dense punctat., nigrum; rostr. crasso, cylindr.; elytr. sulcato-lineatis.

55. Psilosomus). .. .. *Ceylon.*

[calvum, dense sculpt.; rostr. robusto, subparall. sed post. subincrass.; elytr. sulcatis.

56. Mimus]. .. .. *Africa austr.*

(calvum vel setulos., latiuscul., prof. sed parce sculpt.; tibiis latis, apice spinulosis.

57. Amorphocerus). .. .. *Africa austr.*

(subcalvum, nitid., nigrum; rostr. elongat., gracill.; unco tib. obsol.; tars. art.° 3^tio^ late bilobo.

58. Lipancylus). .. .. *Amazon.*

(subcalv., subcylind., brunneo-piceum; rostr. elong., gracil., arcuat.; tib. asperat., unco obsol.

59. Aorus). .. .. *Africa occident.*

(sericat., subopac., depress., ferrug.; rostr. longiss., gracill., recto; anten. ad apicem insert.

60. Homaloxenus). .. .. *St. Domingo.*

(sericat., subopac., angust., pallid.; rostr. longiss., gracill.; tars. art.° 3tio late bilobo.
61. Stenotis). .. .. *ins. Maderens.*

(parvum, subcalv., angust., depress., piceum; rostr. sec. sexum valde diverso.
62. Eucoptus). .. .. *Brazilia.*

(calvum, cylindr., castaneum; antenn. et rostr. sec. sexum valde diversis.)
63. Mesites). .. .. *Europa.*

(fere ut in Mesites, sed sæpe sericat.; antenn. longiorib., capitul. majore; tars. art.° 3tio bilobo.
64. Rhopalomesites). .. .. *Europa occident., ins. Atlant.*

(magis fusif. ac depressius; in ♂ rostr. apice barbato et fem. subdentatis.
65. Odontomesites). .. .. *ins. Atlant.*

[setulos., depress., parall.; antenn. et rostr. sec. sexum divers.; tars. art.° 3tio bilobo.
66. Porthetes]. .. .. *Africa Austr.*

(calvum, depress., nigrum; proth. brevi; anten. et rostr. sec. sexum diversis; capitulo max.°
67. Megalocorynus). .. .. *Mexico.*

(angust., depress., sæpius piceum; rostr. a fronte diviso, post. et ant. sublat.; tars. brev., crass.
68. Catolethrus). .. .. *America.*

(parv., angustiss., cylindr., nigrum; rostr. a fronte diviso, parall.; proth. longiss.; tars. simpl.
69. Stenotribus)... .. .. *Brazilia.*

[fere ut *Catoleth.*, sed parv.; rostr. gracil., parall.; funic. art.° 2do sublong.; tars. simpl.
70. Proëces]. .. .. *Madagascar.*

(angust., piceum; rostro a fronte diviso, et, præsertim ant., lato; ped. crass; tars. brev., crass.
71. Phacegaster). .. .. *Brazilia.*

(fusif., politiss., fere esculpt., atrum sed rufo-varieg.; rostr. ant. dilatat.; tars. brev., crass.
72. Glœodema). .. .. *Nov. Guinea.*

(fusif., polit., leviter sculpt., atrum; rostr. lato, parall.; ped. crass., tib. ant. ad ap. int. longe spinosis.
73. Glœoxenus).. .. .. *Madagascar.*

(cyliudr., nitid., atrum sed rufo-varieg.; rostr. lato, in ♂ antice dilat.; tars. brev., crassis.
74. Exonotus). .. .. *ins. Malayens.*

(nitid., antice levit. sculpt., atrum vel rufo-varieg.; rostr. in ♂ ant. sublat.; tars. brev., crass.
75. Pseudocossonus). .. .. *ins. Orient.*

(angust., parall., subdepress., rufo-castan.; proth. brevi; rostr. parall.; oculis prominent.
76. Catolethromorphus). .. .. .. *India.*

(subdepress., rufo-ferrug.; rostr. parall.; funicul. brevi; capitulo magno; tarsis brev.
77. Brachychænus). .. .. *Borneo.*

(parv., august., parall., ferrug., sericat.; rostr. parall.; scapo brevi; oculis prominent.
78. Stenomimus). .. .. *Brazilia.*

(subfusif., prof. sculpt., ferrug. vel nigrum; rostr. brevi, post. angust.; scapo brevi; ocul. magn., demiss.
79. Micromimus). .. .. *America.*

(politiss., depress., esculpt., picco-ferrug.; capite exsert.; rostr. depress., subquad.; capitulo max°.
80. Glœotrogus). .. .. *ins. Malayens.*

(depress., leviss. sculpt., piceum et ferrug.; capite exsert., angust.; rostr. post. contr.; cap. magno.
81. Homalotrogus). .. .. *ins. Malayens.*

(depress., prof. sculpt., nigr. vel dilut.; capite exsert., subangust.; rostr. magis parall.; cap. magno.
82. Isotrogus). .. .. *ins. Malayens.*

(fusif., depress., nigr. vel rufo-varieg.; proth. fere esculpt., sed in medio biseriatim punct.°
83. Heterophasis). .. .. *ins. Malayens.*

(parall., prof. sculpt., nigr., piceum, vel ferrug.; rostr. ant. pl. min. ampliat.; proth. post. impress.
84. Cossonus). .. .. *fere tot. orb. terr.*

(cylindr., opac., dense sculpt., minute pubesc., nigr.; rostr. brevi, lato, parall.; ocul. prom.
85. Hyponotus). .. .. *Singapore.*

(parall., dense sculpt., nigr.; rostr. breviusc., latiusc., subparall.; oculis prominent.
86. Borophlœus). .. .. *Mexico.*

(subcylindr., crass., grossiss. sculpt., atrum; cap. crass; rostri brevi, subtriang.; ocul. demiss.
87. Pachytrogus). .. .. *Chili.*

(parall.-fusif., crass., grosse sculpt., atrum; rostr. brevi; ped. crass.; tib. ant. intus ampliat.
88. Stereoborus). .. .. *ins. Malayens.*

(fere ut *Stereoboro*, sed rostr. subtus apice barb., post. inciso, tubercul.; tib. ant. int. spinâ auctis.
89. Stereotribus). .. .. .. *ins. Malayens., Ceylon.*

(parall., nigr.; rostr. sublongior., basi angust., post. canalic.; tib. 4 post. calcari bipartitâ auct.
90. Stereomimetes). .. .. *Australia.*

(cylindr., crass., levit. sculpt., nitidiss., atrum; rostr. breviss., latiss.; proth. elong.; tib. ut in *Stereotribo*.
91. Stereoderus). .. .. .. *ins. Malayens., Fiji.*

(angust., fusif., antice et post. attenuatum, nigr.; rostro subgrac., postice subangust.
92. Oxydema). .. .. *ins. Malayens., Ceylon.*

(fere ut *Oxydema*, sed antice et post. minus attenuatum; rostr. post. minus angust.
93. Notiosomus). .. .. *Australia.*

(fere ut *Oxydema*, sed depressius, post. minus atten.; rostr. parall.; capitul. angustiss.
94. Aphanocorynes). .. .. *Australia.*

(angust., parall., depress., nigr.; proth. et elytr. basi rectiss. truncat., his apice recurvis.
95. Orthotemnus). .. .. *ins. Malayens.*

(angust., subfusif., nitid., nigr.; rostr. breviusc., robust., subparall.; ped. brev., crassiusc.
96. Macrorhyncolus). .. .. *ins. Orient.*

(angust., fusif., ferrug.-pictum; rostr. ant. sublat.; ped. et tarsis elongatis.
97. Heterarthrus). .. .. *ins. Japon.*

(angust., cylindr., parall., nigr.; cap. et rostr. crass., latis; ped. crass.; tars. art.° ult.^{mo} conico.
98. Conarthrus). .. .. *ins. Malayens.*

(fere ut *Conarth.*, sed magis fusif., levius sculpt., rufo-ferrug.; rostr. minus lat.; tars. art.° ult.° m. con.°
99. Eutornus). .. .. *ins. Orient.*

(parv., parell., rufo-piceum; ocul. max., prom.; rostr. brev., lat. arcuat.; anten. vers. basin insert.
100. Coptus). .. .. *Nov. Guinea.*

(angust., cylindr., nigr.; cap. crass.; rostr. brev., lato, arcuat.; capitulo magn., abrupto.
101. Pachyops). .. .. *Borneo.*

(fere ut *Pachyops*, sed funic. 5-art.°; capitulo minore; scutell. minus transverso.
102. Pentamimus). .. .. *Australia.*

(parv., angust., cylindr., nigr.; cap. crass.; rostr. breviss., latiss.; funic. 4-art.°; capit.° max.
103. Tetracoptus). .. .. *Nov. Guinea.*

(angust., fusif.-cylindr., nitid., antice lev. sculpt., atrum; rostr. brev., latiss.; tars. art.° 3^{tio} angust.
104. Xestoderma). .. .. *ins. Malayens.*

(fere ut *Xestoderma*, sed rostr. ant. late canalic.; scapo longiore; capit.° max., nigresc., velutino.
105. Xestosoma). .. .. *ins. Malayens.*

(oblong., latinsc., nigr.; rostr. breviss., latiss, post. in medio polito; elytr. post. asperatis.
106. Lissopsis). .. .. *Nov. Guinea.*

(subcylindr., vix calv., brunn.-nigr.; rostr. breviss., canalic.; scapo elong., capit.° magn., abrupt.
107. Sphærocorynes). .. .. *ins. Japon.*

(fusif., nitid., lev. sculpt., atr.; rostr. longiusc., minus crass., post. angust.; scapo elong.; cap.° abrupt.
108. Xenotrupis). .. .. *ins. Malayens.*

(fusif., ant. subopac. post. subnit., nigr.; proth. magn.; rostr. longiusc.; ocul. prom.; scap. recto, crass.
109. Pachystylus). .. .. *Chili.*

(elong., angust., cylindr., nigr.; elytr. post. subpubesc., asperat. et subdivaric.; rostr. breviss., recto.
110. Xenomimetes). .. .. *ins. Japon.*

(cylindr., prof. sculpt., nigr.; rostr. breviss., latiss.; ocul. prom.; ant. crass.; funic. art.° 2do breviss.
111. Eremotes). .. .. *Europa, ins. Canariens.*

(subovat.-cylindr., nigr. vel piceum; antennis subcrass.; capitulo angusto.
112. Rhyncolus). .. .. *fere tot. orb. terr.*

(cylindr., piceus; antenn. minus incrass.; capit.° majore; ocul. magn., haud late sep.
113. Caulophilus). .. .. *ins. Maderens.*

(oblong., depress., picco-ferrug.; elytr. costat.; tib. ext. spinos., unco obsol.
114. Xenocnema). .. .. *Nov. Zealand.*

nn. *coxis anterioribus vel fere vel omnino contiguis.* (*oculi demissi.*)
p. *rostro brevi, triangulari-cylindrico.*

115. Stereocorynes .. .. *Europa.*
116. Hexarthrum .. .. *ins. Japon., Madera, Europa.*
117. Tomolips. .. .. *Mexico.*

pp. *rostro brevissimo, lato, crasso, triangulari.* (*caput crassum.*)

q. *scutello conspicuo.*

118. Dendroctonomorphus .. .. .. *Ceylon.*
119. Brachytemnus .. .. .. *Europa, ins. Canariens.*
120. Calyciforus .. .. *Brazilia.*

qq. *scutello ægre observando.*

121. Eurycorynes .. .. *Brazilia.*
122. Stenoscelis .. .. .. *ins. Japon., St. Helena, Africa.*

Ordo COLEOPTERA.

Sectio Rhynchophora.

Fam. *Cossonidæ.*

I. *Funiculus* 4-*art.* . . . . . Subfam. *Notiomimetides.*

(*Corpus calvum, subnitidum; oculis obsoletis; coxis valde separatis; tibiis apice haud uncinatis; tarsis pseudotetrameris.*)

1. Corpus minutum, breviter fusiforme, parum grosse sculpturatum, piceum, subtus deplanatum; rostro subgracili, parallelo, arcuato, supra subgibboso, oculis minutissimis, obsoletis, ægerrime observandis, et lentibus perpaucis (ut in *Amaurorrhino* et *Pentatemno*) compositis; capite in prothorace profunde immerso, hôc elongato-subquadrato, longe pone apicem valde transversim constricto; elytris haud costatis, versus apicem regulariter attenuatis (nec cariniformibus); metasterno longiusculo; abdominis segm.^{tis} 1mo et 2do inter se arcte connatis. Antennæ subgraciles, mox ante medium rostri insertæ; scapo longe ante apicem subito elongate clavato; funiculi (4-articulati, laxi) art.° 2do sequentibus sensim longiore; capitulo magno, abrupto, ovali. Pedes longiusculi, antici ad basin late, intermedii etiam multo latius, et postici latissime separati; femoribus subtus denticulo subobsoleto armatis; tarsis brevissimis, latis, crassis, art.^{is} 1mo et 2do brevibus et (præsertim hôc) transversis, 3^{tio} latiore et profunde bilobo (lobis tamen haud divaricatis) ult.^{mo} brevi, inter lobos tertii fere abscondito et unguiculis maximis, subparallelis armato.

Hab. Australiam meridionalem (*juxta mare captus*).—*Notiomimetes.*

II. *Funiculus* 4-*art.* . . . . . Subfam. *Dryophthorides.*

(*Corpus aut lutosum aut subvelutinum, opacum, rariss. subnitidum; oculis distinctis, tamen demissis, transversis; coxis, præsertim anticis, minus separatis; tibiis apice uncinatis; tarsis conspicue* 5-*articulatis, i. e. art.° 4to distincto.*)

2. Corpus fusiformi-ellipticum, grosse arguteque sculpturatum, subnitidum et fere calvum (punctis solum hinc inde lutoso-repletis); rostro crasso, cylindrico, parallelo, oculis transversis, demissis; prothorace (postice elytrorum latitudine) magno, cylindrico-subquadrato, æquali (sc. antice vix constricto et haud impresso); elytris ellipticis, basi late arcuatim emarginato-truncatis, costatis, apice simplicibus (nec cariniformibus); metasterno longiusculo. Antennæ breviusculæ, crassiusculæ, pone medium rostri insertæ: funiculi (4-articulati, compacti) art.° 2do sequentibus haud longiore; capitulo magno, ovali. Pedes antici ad basin parum separati, posteriores (præsertim postici) magis, sed haud valde, distantes; tibiis, præcipue versus apicem, gracilibus; tarsis gracillimis, filiformibus, art.° 3^tio^ angusto, simplici, unguiculis minutissimis.

(Inter *Dryophthorides* valde anomalum corpore fere calvo, sc. punctis solum hinc inde lutoso-repletis, ac subnitido, nec opaco; prothorace magno, postice elytrorum latitudine, et æquali, nec antice constricto et impresso; elytris basi late emarginato-truncatis, humeris subporrectis, necnon ad apicem simplicibus, nullo modo cariniformibus.)

Hab. Nov. Guinea (*ad Saylee deprehensus*).—

Psilodryophthorus.

3. Corpus ellipticum, aut breviter fusiforme, grosse sculpturatum, dense sericato-velutinum; rostro elongato, gracili, arcuato, parallelo, ad apicem polito calvo et haud sculpturato; oculis angustissimis, valde transversis, demissis, subtus fere contiguis; prothorace (elytris paulo angustiore) antice constricto; elytris costatis, postice attenuatis sed haud cariniformibus (tamen costâ 2^dâ^ a suturâ postice gradatim paulo magis prominente); metasterno breviusculo. Antennæ longiusculæ, longe pone medium rostri insertæ; scapo elongato; funiculi (4-articulati, compacti) art.° 2do sequentibus paulo longiore; capitulo magno, elongato. Pedes longiusculi, subgraciles, velutini, antici ad basin parum, intermidii multo latius, et postici

fere latissime separati; tibiis gracilibus; tarsis gracillimis, filiformibus, art.° 3^tio^ angusto, simplici, unguiculis minutissimis.

(A *Dryophthoro* distinctum corpore minore, etiam magis elliptico, et dense velutino, nec lutoso; rostro multo longiore, graciliore, magis arcuato, et magis parallelo; oculis multo angustioribus ac magis transversis, sc. subtus etiam fere contiguis; elytris apice magis attenuatis et haud cariniformibus, sed tamen costâ 2^dâ^, nec 4^tâ^, postice paulo exstanti; antennis longioribus, scapo præcipue longiore; metasterno sub-breviore; coxisque omnibus, sed præsertim posterioribus, magis separatis.)

Hab. Americam borealem (*in Mexico degens*).— *Stenommatus.*

4. Corpus fusiforme, grosissime sculpturatum, plus minus lutosum, necnon (oculo fortissime armato) minutissime, brevissime, parcissimeque setulosum; rostro robusto, parallelo sed mox ante antennarum insertionem paululum ampliato, valde rugoso; oculis transversis, demissis; prothorace (elytris angustiore) antice profunde constricto; elytris costatis, utrinque versus apicem cariniformibus (sc. costâ, circa 4^tâ^ a suturâ, in carinam postice currente); metasterno longiusculo. Antennæ breviusculæ, crassiusculæ, calvæ, pone medium rostri insertæ; funiculi (4-articulati, compacti) art.° 2do sequentibus vix longiore; capitulo magno, ovali, solido, ad apicem ipsum velutino-pubescenti. Pedes longiusculi, antici ad basin sensim separati; tibiis (præcipue versus apicem) gracilibus; tarsis gracillimis, filiformibus, art.° 3^tio^ angusto, simplici, unguiculis minutissimis.

Hab. Europam.— *Dryophthorus.*

5. Corpus et cæt. fere ut in *Dryophthoro*, sed illo magis parallelo-fusiformi (sc. in elytris lateraliter compresso), prothorace sensim majore, elytris versus apicem multo latius cariniformibus (sc. costâ, circa 6^tâ^ a suturâ, nec 4^tâ^, in carinam valde exstantem postice currente), rostro, antennis pedibusque (præsertim tarsis) brevioribus, rostro vix ampliato ad (nec distinctius et ante) antennarum insertionem, coxisque anticis paulo magis, sed posticis minus (quam in *Dryophthoro*) separatis.

Hab. ins. Japonicas (*et, nisi fallor, in Pacificis, Americâ, et cæt.*).— *Tetratemnus.*

III. *Funiculus 5-art.* . . . . . Subfam. *Pentarthrides.*

(*Tibiis apice uncinatis ; tarsis pseudotetrameris.*)

a. *Oculi distincti.*

b. *Corpus lutosum ; scutello haud, vel vix, observando.*

6. Corpus ellipticum aut breviter fusiforme, grossissime sculpturatum, subsericato-lutosum, *Dryophthori* formam simulans ; capite immerso ; rostro elongato, robusto, arcuato-cylindrico, ad antennarum insertionem obsoletissime vix subampliato ; oculis angustissimis, valde transversis, demissis, supra subapproximatis, subtus omnino confluentibus ; prothorace (elytris multo angustiore) subovali-cylindrico, antice leviter constricto ; elytris fusiformibus antice late et valde truncatis, postice attenuatis sed haud cariniformibus, costatis (costis alternis magis elevatis) ; metasterno brevi, lato ; abdomine ut in *Dryophthoro*, sc. segm.^{tis} 1mo et 2do singulatim convexis necnon lineâ impressâ distincte divisis. Antennæ crassæ, calvæ, mox pone medium rostri insertæ ; funiculo (5-articulato, compacto) ab art.° 2do (sequentibus paulo longiore) gradatim multo latiore ; capitulo maximo, ovali, solido, ad apicem internum late oblique truncato et ibidem dense velutino. Pedes longissimi et valde incrassati, antici ad basin contigui, intermedii minime separati, sed postici latissime distantes ; tibiis elongatis, subcurvatis, versus apicem obsolete subangustioribus, unco valde inflexo, posterioribus ad angulum internum spinâ brevi robustâ armatis ; tarsis crassiusculis, filiformibus, art.° 1mo paulo elongato, 3^{tio} simplici.

(Genus mirabile, anomalum, et formâ generali, sculpturâ, vestitû, rostro, antennis, oculis transversis demissis, abdominis structurâ, tibiisque apicem versus gradatim subangustioribus *Dryophthorum* primâ facie simulans ; sed funiculo 5-, nec 4-articulato, tarsorumque art.° 4to minutissimo, immerso. Præterea exstat rostro elongato, arcuato-cylindrico ; oculis latissimis, sc. supra subapproximatis et subtus etiam omnino confluentibus suffusis ; capite immerso ; funiculo latitudine paulatim valde crescentibus ; capitulo maximo, solido, ad apicem internum oblique truncato et ibidem dense velutino ; prothorace elytris multo angustiore, subcylindrico ; elytris antice latis, apice acuminatis sed ibidem haud cariniformibus ; pedibus longissimis et valde incrassatis, anticis ad basin contiguis et etiam

intermediis minime separatis, sed posticis latissime distantibus ; tarsisque crassiusculis, art.° 3^{tio} simplici.)

Hab. ins. Borneo (*ad Sarawak captus*).—*Synommatus.*

7. Corpus cylindrico-oblongum, opacum, *Dryophthorum* et *Tetratemnum* simulans, sed paulo minus grosse (præsertim in prothorace), tamen densissime, sculpturatum; rostro, antennis, pedibusque brevioribus ac multo crassioribus, nostro parallelo, lato, depresso, antennis in medio (nec pone medium) rostri insertis, oculis minoribus, multo magis prominentibus, ac rotundatis (nec transversis); elytris ad humeros porrectis, utrinque versus apicem (ut in *Tetratemno*) late cariniformibus et minutissime serratis. Antennæ brevissimæ ; funiculi (5-articulati) art.° 2do sequentibus haud longiore; capitulo parvo, solido. Pedes breves, valde incrassati, anteriores sensim magis approximati quam in *Dryophthoro ;* tarsis brevibus, crassis, art.° 1mo haud elongato, 3^{tio} latiusculo, bilobo, subtus pubescenti.

(A *Pentecopto* differt corpore majore, prothorace minus angustato, elytris utrinque ad apicem (ut *Tetratemno*) late cariniformibus, coxis anterioribus sensim magis approximatis, abdominisque segm.^{tis} 1mo et 2do inter se multo minus recte (sc. valde sinuate) divisis.)

Hab. Europam australem.— *Chærorrhinus.*

8. Corpus breviter parallelo-oblongum, opacum, grosse sculpturatum ; rostro brevi, lato, parallelo, depresso, oculis valde prominentibus; prothorace elytris angustiore ; metasterno breviusculo. Antennæ brevissimæ, in medio rostri insertæ ; funiculi (5-articulati) art.° 2do haud sequentibus longiore ; capitulo parvo, solido. Pedes breves, crassi ; tarsis crassis, art.° 1mo haud elongato, 3^{tio} latiore, bilobo.

Hab. ins. Japonicas.— *Pentacoptus.*

9. Corpus angustum, cylindricum, opacum, grosse sculpturatum ; rostro elongato, angusto, parallelo, oculis prominentibus ; prothorace ovali-cylindrico, elytrorum latitudine ; metasterno elongato. Antennæ subgraciles, in medio rostri insertæ ; funiculi (5-articulati) art.° 2do sequentibus sensim longiore ; capitulo angusto, longiusculo, solido. Pedes crassi ; tarsis brevibus, crassis, art.° 1mo brevi, 3^{tio} dilatato et profunde bilobo.

Hab. ins. Malayenses (*in Sula captus*).— *Lyprodes.*

bb. *Corpus* (*in* SERICOTROGO *et* LEPTOMIMI *parte exceptis*) *calvum; scutello conspicuo.*

10. Corpus elongate cylindrico-ovatum, convexiusculum, nitidissimum, castaneum; rostro brevi, lato sed ad basin valde contracto aut strangulato, deflexo, oculis demissis; prothorace (elytris conspicue angustiore) subparvo, cylindrico-ovato, antice subintegro (i. e. vix constricto); elytris elongate cylindrico-ovatis, basi subsinuate truncatis; metasterno longiusculo, et, una cum abdominis segm.^to^ 1mo, paulo concavo. Antennæ crassiusculæ, mox ante medium rostri insertæ; scapo breviusculo; funiculi (5-articulati) art.° 1mo magno, antice recte truncato, reliquis brevibus, subæqualibus, submoniliformibus; capitulo magno, ovali. Pedes longiusculi, ad basin fere ut in *Phlœophago* (sc. antici subcontigui, intermedii paululum magis distantes, postici sat late separati); tarsis longiusculis, art.° 1mo longiusculo, 3^tio^ paulo latiore et minute bilobo.

(Genus prothorace sat parvo angustulo, corpore elongate cylindrico-ovato, coxisque anterioribus, præsertim anticis, valde approximatis *Phlœophagum* simulans, sed funiculo 5-, nec 7-articulato, scutello conspicuo, antennisque et rostro aliter constructis. Inter *Pentarthrides* insignum est rostro brevi lato sed ad basin profunde strangulatim constricto, oculis demissis, prothorace parvo angustulo, elytris elongate cylindrico-ovatis, coxisque anterioribus, sc. ut in *Phlœophago*, multo magis approximatis.)

Hab. Americam australem (*in Novâ Granadâ degens*).—*Phlœophagomorphus.*

11. Corpus fere ut in *Pentarthro*, sed minus, ac breviter cylindricum, *Phlœophagum* primâ facie simulans (tamen minus ovatum), convexum, calvum, nigrum; rostro breviore ac paulo latiore, parallelo, oculis paulo minus prominentibus; prothorace minus elongato et magis ovali (nec ovato-triangulari); elytris cylindricis; metasterno conspicue breviore. Antennæ ut in *Pentarthro*, sed mox ante medium rostri insertæ. Pedes anteriores magis approximati (sc. ut in *Phlœophago*),—antici fere contigui, necnon etiam intermedii leviter solum distantes; tarsis art.° 1mo vix elongato; 3^tio^ simplici.

Hab. Americam borealem (*in Mexico captum*).—*Pseudopentarthrum.*

12. Corpus fere ut in *Pentarthro*, sed multo minus; rostro breviore, sublatiore, ad basin multo magis conspicue strangulatim contracto; antennis versus basin ejus insertis, scapo elongato excurvato et robuste clavato sed ad apicem internum longe et oblique truncato, funiculi (5-articulati, brevis) art.° 2do brevissimo (sc. sequentibus etiam subbreviore), capitulo maximo ovali valde abrupto; oculis majoribus, sc. maximis ac valde prominentibus; scutello minuto; pedibus brevioribus; tibiis præcipue brevioribus ac magis triangularibus (i. e. apicem versus magis dilatatis), unco apicali in posterioribus brevi recto spiniformi sed in anticis brevissimo obsoleto, tamen anticis ad angulum internum in spinam magnam pubescentem unciformem excurvatam productis; tarsis ad basin incrassatis (sc. art.^{is} 1mo, 2do et 3^{tio} crassis, subæqualibus), ult.^{mo} graciusculo.

Hab. ins. Malayenses.— *Xenosomatium.*

13. Corpus vel cylindricum vel fusiformi-cylindricum, subnitidum (rariss. subopacum), vel piceum vel castaneum; rostro (interdum in ♀ graciliore, ut in *P. Huttoni*, et minus sculpturato) plus minus elongato (nunquam longissimo), parallelo; prothorace sat magno: metasterno valde elongato. Antennæ circa (aut interdum in ♂ mox ante, sed in ♀ mox pone) medium rostri insertæ; scapo recto, robusto, gradatim valde clavato; funiculi (5-articulati) art.♀ 2do vel (ut in *P. Huttoni*), paululum, vel haud, sequentibus longiore; capitulo sat parvo subsolido. Pedes crassiusculi; tarsis art.° 1mo haud elongato, 3^{tio} sæpius latiusculo cordato, sed interdum (ut in *P. cylindrico*) angusto, simplici.

Hab. Europam, Nov. Zealand., Americam austr., ins. Malayenses ac Japonicas, et cæt.— *Pentarthrum.*

14. Corpus et cæt. fere ut in *Pentarthro*, sed illud minus, angustius, sensim minus parallelum (sc. magis fusiforme), necnon subæneo-micans pubeque grossâ demissâ subæneocinereâ parce vestitum; capite magis exserto, rostro vix longiore et graciliore magisque curvato ac fere parellelo, aut (saltem in ♂) pone antennas vix subangustato, oculis valde prominentibus; antennis magis ante medium rostri insertis, subgracilioribus; scapo præcipue graciliore; funiculi (5-articulati, laxi) art.° 2do sequentibus paulo longiore; capitulo sat magno, et paululum magis abrupto; prothorace convexiore et magis ovali (i. e. minus triangulari et minus cylindrico), ad latera subæqualiter rotundato,

antice fere integro, et subtus subconcavo; elytris minus parallelis (sc. antice sensim angustatis), ad apicem ipsissimum integris (nec subrecurvis, nec singulatim subrotundatis); metasterno minus elongato; abdominis segment.° 1mo (in ♂) longitudinaliter concavo; tarsorumque art.° 3^tio^ multo latiore, et profundius latiusque bilobo.

Hab. Nov. Zealandiam (*ab Auckland missus*).— *Sericotrogus.*

15. Corpus angustissimum, parallelum, depressum, subnitidum, vel nigrum vel pallidius, sæpe minutum; capite magno, crasso, elongato-ovali, valde exserto; rostro (præsertim in ♀) elongato, graciusculo, subparallelo sed apicem versus facile sublatiore, oculis omnino demissis, supra haud latissime separatis; prothorace subovato-trianguli; elytris (prothorace haud latioribus) parallelis, apice minute pubescentibus; metasterno longissimo. Antennæ longe pone medium rostri insertæ; funiculi (5-articulati) art.° 2do haud sequentibus longiore. Pedes (præsertim posteriores) brevissimi, omnes ad basin parum et æqualiter distantes (nec antici magis approximati); tarsis brevibus, art.° 1mo brevi, 3^tio^ paulo latiore set fere simplici.

(A *Pentarthro* præcipue differt corpore angustiore, depressiore; capite longiore, crassiore, ovali, et multo magis exserto; rostro, præsertim in ♀, longiore, graciliore, versus apicem facile subdilatato; oculis omnino demissis, et supra magis approximatis; prothorace magis triangulari, et pone apicem minus constricto; elytris apice sensim pubescentibus; pedibus, saltem posterioribus, multo brevioribus, necnon omnibus ad basin æqualiter separatis.

Etiam *Catalethro* interdum confunditur, sed ab hôc differt funiculo 5-, nec 7-, articulato; corpore minore, graciliore, et postice minute pubescenti; capite majore, crassiore, elongato, exserto; rostro versus apicem sensim latiore; prothorace magis triangulari, et antice minus constricto; pedibus posterioribus brevioribus; tarsorum art.° 3^tio^ simplici; coxisque omnibus æqualiter separatis.)

Hab. ins. Malayenses, et Cuba.— *Stenotrupis.*

16. Corpus angustum, parallelum, depressum, nitidum, pallidum, minutum; capite magno, crasso, elongato-ovali, valde exserto; rostro breviusculo, lato, subparallelo sed apicem versus facile latiore; oculis maximis, subprominulis, supra haud late separatis; prothorace magno, elongato,

ovato-triangulari ; elytris (prothorace haud latioribus) parallelis ; metasterno longissimo ; abdominis segm.^{tis} 3^{tio}, 4to et ult.^{mo} ad basin punctis magnis (in lineâ transversâ positis) marginatis. Antennæ mox ante basin rostri insertæ ; scapo curvato ; funiculi (5-articulati) art.^{o} 2do vix sequentibus longiore. Pedes omnes ad basin late et æqualiter distantes (nec antici magis approximati) ; tarsis brevibus, art.^{o} 1mo brevi, 3^{tio} paulo latiore sed fere simplici.

(Capite crasso, elongato, valde exserto, corpore angusto parallelo depresso, coxisque omnibus ad basin æqualiter separatis, gen. *Stenotrupis* congruens ; sed differt corpore etiam minore et paulo minus angustato, coxis latius distantibus, rostro breviore et latiore, oculis majoribus, elytris ad apicem haud pubescentibus, necnon antennis multo magis versus basin rostri insertis.)

Hab. Nov. Guinea (*ad Saylee captus*).—

Microcossonus.

17. Corpus fusiformi-parallelum, depressum, subnitidum, pallido-variegatum ; rostro brevisculo, crasso, parallelo, oculis maximis et valde prominentibus ; prothorace (elytris sensim angustiore) triangulari-ovato, inæquali ; elytris subparallelis, postice gradatim subattenuatis ; metasterno elongato ; abdominis segm.^{tis} 1mo et 2do lineâ rectâ distinctâ arcte divisis. Antennæ in medio (aut mox ante medium) rostri insertæ ; funiculi (5-articulati, laxi) art.^{o} 2do sequentibus distincte longiore ; capitulo magno, abrupto, conspicue annulato. Pedes elongati, robusti, ad basin valde (etiam antici late) separati ; femoribus (præsertim anticis) valde clavatis, necnon intus parcissime minutissimeque subtuberculato-asperatis ; tibiis intus sinuatis, et ad apicem internum in spinulam distinctam productis ; tarsis elongatis, art.^{o} 1mo brevisculo, 3^{tio} valde dilatato et profunde bilobo, ult.^{mo} elongato, unguiculis magnis.

(Genus inter *Pentarthrides* valde anomalum, et *Cossoni* formam simulans. Conspicuum est corpore magno, fusiformi-parallelo, depresso, profunde sculpturato ; oculis maximis et valde prominentibus ; funiculi art.^{o} 2do sequentibus distincte longiore ; pedibus elongatis, robustis ; femoribus valde clavatis et intus obsolete subasperatis ; tibiis intus sinuatis, et ad angulum internum in spinulam conspicuam productis ; tarsisque elongatis, art.^{o} ult.^{mo} elongato, unguiculis magnis.)

Hab. Australiam occidentalem.— *Cossonidius.*

18. Corpus oblongo-ellipticum, latiusculum, depressiusculum, nitidiusculum, castaneo-piceum; capite parvo, oculis haud late separatis, rostro (an in utroque sexu?) gracillimo, parallelo, polito; prothorace brevi, transverso; metasterno longiusculo. Antennæ graciles, longe pone medium rostri insertæ; scapo breviusculo, valde incurvo, intus flexuose subexcavato; funiculi (5-articulati, laxi) art.° 2do sequentibus multo longiore; capitulo ovali. Pedes crassi, omnes ad basin (etiam antici) late separati; tarsis longiusculis, art.° 1mo haud elongato, 3^tio^ latiusculo et distincte profundeque bilobo.

Hab. ins. Japonicas (*in Awasima captus*).—

Tychiodes.

19. Corpus et cæt. fere ut in *Tychiodes*, sed illud majus ac depressius; rostro (ut in illo) gracillimo, parallelo, polito, sed etiam paulo longiore, atque antennis vix pone (nec longe pone) medium ejus insertis; antennis longioribus, scapo præcipue longiore ac minus (tamen conspicue) arcuato, intus haud flexuose subexcavato, funiculo gradatim multo latiore, quare capitulo (longiore) minus abrupto; prothorace (parvo) magis triangulari, sc. antice magis angustato; prosterno, inter coxas anticas, fulvo-pubescenti; pedibus longioribus; tibiisque anticis intus versus apicem obsolete emarginatis, emarginatione postice setuloso-penicillatâ.

Hab. ins. Philippine.— *Tychiosoma.*

20. Corpus angustissimum, parallelum, subdepressum, opacum, densissime sculpturatum, vel subcalvum vel setuloso-pubescens, brunneum; capite parvo; rostro longissimo, gracillimo, parallelo; oculis subprominulis (vix omnino demissis), supra haud latissime separatis; prothorace longissimo, subovato-triangulari, mox pone apicem valde profunde constricto; elytris (prothorace haud latioribus) parallelis; metasterno longissimo; etiam abdominis segm.^tis^ 3^tio^ et 4to minus abbreviatis quam in *Cossonidis* typicis. Antennæ elongatæ, graciles, vel mox ante vel mox pone medium rostri insertæ; scapo elongato; funiculi (5-articulati, laxi) art.° 2do sequentibus multo longiore. Pedes posteriores breves; intermedii parum late separati, sed antici et postici magis et æqualiter approximati; unco tibiali parvo; tarsis art.° 1mo brevi, 3^tio^ multo latiore et profunde bilobo.

(Genus conspicuum corpore angustissimo, parallelo, opaco, densissime sculpturato, et interdum setuloso-pubescente; rostro longissimo, gracillimo; prothorace valde elongato; antennis gracillibus, funiculi art.° 2do sequentibus multo longiore; necnon coxis intermediis parum late separatis, sed anticis et posticis magis ac æqualiter approximatis.)

Hab. ins. Malayenses (*in Gilolo captus*).—*Leptomimus.*

bbb. *Corpus calvum, vel rarius minute pubescens; scutello obsoleto.*

21. Corpus elongato-fusiforme, nitidum, vel parce breviter pubescens, vel subcalvum, æneum (rarius nigrescens); rostro longissimo, gracillimo, in ♂ ante medium (ad antennarum insertionem) paulo ampliato, sed in ♀ etiam longiore graciliore cylindrico ac magis polito; prothorace subovato, basi truncato; metasterno brevi, et (una cum abdominis segm.^to^ 1mo) concavo. Antennæ elongatæ, graciles, longe ante medium rostri (in utroque sexu) insertæ; scapo recto, gracili, ad apicem ipsum leviter clavato; funiculi (laxi, 5-articulati) art.° 2do longissimo, sequentibus multo longiore; capitulo magno, elongato-ovali. Pedes longissimi, anteriores sensim magis approximati quam in *Microxylobio;* tarsis longissimis, art.° 1mo elongato, 3^tio^ late dilatato ac profunde bilobo, ult.^mo^ longissimo, clavato, curvato, unguiculis magnis armato.

Hab. ins. S^tæ^ Helenæ.— *Lamprochrus.*

22. Corpus vel fusiforme, vel ovatum, nitidissimum, minus sculpturatum, calvum, æneum (rarius nigrescens); rostro plerumque paulo longiore et graciliore quam in *Microxylobio*, plus minus parallelo; prothorace vel ovato basi truncato, vel conico; metasterno brevissimo, et (una cum abdominis segm.^to^ 1mo) sæpius concavo. Antennæ ponc apicem rostri insertæ; funiculi (5-articulati) art.° 2do (sed vix in *A. monilicorni*) sequentibus distincte longiore. Pedes robusti; femoribus posticis vel (ut in speciebus typicis) supra spinâ armatis, vel muticis; tarsi art.° 1mo vix longiore, 3^tio^ latiusculo et profunde bilobo.

Hab. ins. S^tæ^ Helenæ.— *Acanthomerus.*

23. Corpus vel fusiforme, vel ovato-fusiforme, subopacum, aut minutissime parceque pubescens, aut calvum,

nigrum (rariss. aut picescens, aut subæneo-tinctum); rostro breviusculo, crassiusculo (vel parallelo, vel subtriangulari); prothorace magno, sæpius ovato basi truncato; metasterno brevi, et (una cum abdominis segm.to 1mo) sæpius concavo. Antennæ longe ante medium rostri insertæ; funiculi (5-articulati) art.° 2do sequentibus vix longiore. Pedes breviusculi, robusti; tarsis art.° 1mo vix secundo longiore, 3tio latiusculo bilobo.

Hab. ins. Stæ Helenæ.— *Microxylobius.*

24. Corpus fusiforme, subnitidum, fere calvum (solum versus elytrorum basin pilis perpaucis obsitum), nigropiceum; capite convexo, rostro longiusculo, graciusculo, parallelo, oculis parvis sed prominentibus, superioribus (i. e. supra haud latissime separatis); prothorace magno, ovali (ad latera valde et æqualiter rotundato), convexo, antice leviter constricto; elytris fusiformibus basi truncatis, ad basin præsertim versus humeros pilis perpaucis obsitis; metasterno brevi, et postice (una cum abdominis segm.to 1mo) paululum concavo. Antennæ longiusculæ, mox ante medium rostri insertæ; funiculi (5-articulati, laxi) art.° 2do sequentibus conspicue longiore, reliquis tres subglobosis, submoniliformibus, vix crescentibus; capitulo magno, valde abrupto. Pedes longiusculi, crassiusculi; tarsis art.° 1mo vix elongato, 3tio multo latiore et profunde bilobo.

(Genus inter formas proximas distinctum rostro longiusculo subgracili parallelo, oculis parvis sed valde conspicuis prominulis atque supra minus late separatis, prothorace magno ovali in medio latiusculo, elytris fusiformibus necnon ad basin pilis perpaucis obsitis, funiculi laxi art.° 2do sequentibus conspicue longiore, capitulo magno abrupto, tarsarumque art.° 3tio lato ac valde profundeque bilobo.)

Hab. Novam Zealandiam.— *Microtribus.*

25. Corpus angustulo-fusiforme, nitidum, calvum, piceum; rostro breviusculo, latiusculo, subparallelo (postice vix latiore), oculis minutissimis sed prominulis, distinctis (nec obsoletis); prothorace elongato, triangulari-ovato, antice integro (nec constricto); elytris cylindrico-fusiformibus basi truncatis, convexiusculis; metasterno breviusculo, et (una cum abdominis segm.to 1mo) paululum concavo. Antennæ breves, in medio rostri insertæ; scapo recto, breviusculo; funiculi (5-articulati) art.° 2do haud sequentibus longiore; capitulo haud abrupto. Pedes breves,

crassiusculi; tibiis ad angulum internum in spinulam parvam productis; tarsis art.° 1mo haud elongato, 3^tio^ vix latiore et fere simplici.

(Genus *Mesoxenum*, i. e. *Amaurorrhinum*, simulans, sed oculis distinctis, tamen minutis prominulis, nec obsoletis; corpore, præcipue in prothorace, angustiore; rostro paulo breviore, latiore, ac magis parallelo, nec pone medium facile contracto; antennis multo brevioribus et in medio, nec ante medium, rostri insertis; pedibus brevioribus, anticis et posticis vix magis approximatis; tarsorum art.° 3^tio^ magis simplici; metasternoque, tamen brevisculo, sensim longiore et minus concavo.)

Hab. Africam australem (*a Caffrariâ missus*). — *Mesoxenomorphus.*

aa. *Oculi obsoleti.*

c. *Scutellum distinctum.*

26. Corpus parvum, angustum, parallelum, subdepressiusculo-cylindricum, nitidum, calvum, picco-castaneum; rostro brevi et (præsertim in ♂) latissimo, postice paulo angustiore, a capite (supra et subtus) lineâ diviso; prothorace elongato, ovato-triangulari, pone apicem leviter constricto; elytris (prothorace etiam subangustioribus) parallelis; metasterno elongato; abdominis segm.^to^ 1mo in ♂ obsolete longitudinaliter concavo. Antennæ pone apicem rostri insertæ; scapo brevi, robusto, subito et valde clavato; funiculi (5-articulati) art.° 2do haud sequentibus longiore; capitulo breviter ovali. Pedes breves, crassiusculi, ad basin (etiam antici) late separati (posteriores subæqualiter distantes); tarsis breviusculis, art.° 1mo haud elongato, 3^tio^ angusto, simplici.

(Inter *Pentarthrides* insigne oculis obsoletis, ægerrime observandis, tamen scutello conspicuo; et præterea exstat corpore parvo angusto parallelo, rostro brevi latissimo postice sensim angustiore necnon a capite lineâ distinctâ diviso, scapoque brevi et abrupte clavato.)

Hab. Nov. Zealandiam.— *Heteropsis.*

cc. *Scutellum obsoletum.*

27. Corpus ovato-fusiforme, nitidum, calvum, picco-castaneum; rostro longiusculo, subparallelo sed pone medium paululum angustiore; prothorace subovato, convexo, pone apicem vix constricto; elytris vel elongato-

ovatis vel fusiformibus, basi truncatis, convexis; metasterno brevi, et (una cum abdominis segm.to 1mo) sæpius longitudinaliter concavo. Antennæ longe ante medium rostri insertæ; scapo subgracili, curvato; funiculi (5-articulati) art.o 2do vel (ut in *A. Moniziano*) distincte, vel vix sequentibus longiore; capitulo parum abrupto. Pedes crassiusculi; tarsis artº. 1mo vix elongato, 3tio paulo latiore et sensim sed minute bilobo.

Hab. Europam austr., et ins. Maderens. et Canariens.— *Amaurorrhinus.*

28. Corpus et cæt. fere ut in *Amaurorrhino*, sed illud (præcipue in elytris) angustius ac minus fusiforme; rostro sensim breviore, crassiore, et elongate subtriangulari (nec subparallelo et postice paululum augustiore); prothorace majore, ovali (etiam elytris sublatiore), antice subintegro (vix constricto); elytris angustioribus, magis parallelis, minus convexis, subcylindricis; metasterno sensim longiore, et (una cum abdominis segm.to 1mo) convexo, nec concavo; antennis pedibusque brevioribus, his quoque minus incrassatis; tibiis ad angulum internum in spinulam parvam productis; tarsis gracilibus, art.o 3tio angusto, simplici.

Hab. ins. Stæ Helenæ.— *Pseudomesoxenus.*

29. Corpus fusiforme, nitidiusculum (saltem antice), parce sed longe pilosum, piceum; rostro breviusculo, crasso, parallelo; prothorace sat magno, subovali, convexo, antice integro (nec constricto); elytris et subtus dense punctato-asperatis; metasterno breviusculo. Antennæ breves, crassæ, circa medium rostri insertæ; scapo brevi; funiculi (5-articulati) art.o 2do haud sequentibus longiore; capitulo solido. Pedes crassi; tibiis subfossoriis, unco apicali magno, in posterioribus ad basin compresso-ampliato; tarsis art.o 1mo vix elongato, 3tio angusto, simplici.

Hab. ins. Canarienses, et ins. Cap. Verde.— *Pentatemnus.*

aaa. *Oculi nulli.*

30. Corpus ovato-fusiforme, nitidum, parce sed longissime pilosum, pallide rufo-piceum; rostro breviusculo, crasso, parallelo; prothorace ovali; elytris inæqualibus et (præsertim postice) asperatis; metasterno breviusculo. Antennæ breves, crassæ, circa medium rostri insertæ;

scapo brevi, robusto; funiculi (5-articulati) art.° 1mo magno, sub-obtriangulari, 2do brevi (sequentibus etiam breviore); capitulo magno, solido. Pedes breviusculi, crassiusculi; tibiis subfossoriis, flexuosis, ad angulum internum in spinam distinctam productis, unco apicali in anterioribus (præsertim anticis) magno, in posticis breviore et fere spiniformi; tarsis anterioribus angustulis, filiformibus, posticis latioribus; art.° 1mo vix secundo longiore, 3^tio simplici, ult.^mo brevi, parvo, subovali, unguiculis minutissimis (ægerrime observandis) armato. [*N.B.*—In specimine descripto tarsi postici fracti sunt, articuli 3 basales solum manent; sed anteriores sunt integri.]

Hab. Australiam occidentalem (*ad Freemantle captus*).—*Halorhynchus.*

IV. *Funiculus* 6-*art.* . . . Subfam. *Onycholipides.*

(*Corpus pallidum, plus minus pilosum; metasterno brevi, interdum brevissimo; tibiis fossoriis, plus minus compressis ac ciliatis, apice haud uncinatis; tarsis vere* 4-*articulatis.*)

d. *Oculi distincti.*

31. Corpus ovale, convexiusculum, subopacum, rufo-piceum sed dense pallidulo-squamosum, pilisque longissimis præsertim postice et subtus adspersum; rostro brevi, lato, apice late truncato; oculis magnis, transversis, sed demissis; prothorace lato, subtriangulari-ovato, antice leviter constricto; scutello parvo; elytris (subter squamis) leviter punctato-striatis, necnon in interstitiis subpunctulato-asperatis; metasterno brevi; abdominis segm.^tis 1mo et 2do lineâ haud valde distinctâ divisis. Antennæ breves, robustæ, versus basin rostri insertæ; scapo brevi, longissime piloso; funiculi (6-articulati, compacti) art.° 1mo magno, crasso, 2do haud sequentibus longiore; capitulo ovali, solido. Pedes longiusculi, validi, fossorii, longe et densissime hirsuti, antici omnino et intermedii fere contigui, postici parum late separati; tibiis ad apicem ipsissimum breviter et dense (in anticis densissime et compacte) setuloso-marginatis, necnon (præsertim anterioribus) ad angulum internum spinâ robustâ armatis, anticis ad angulum externum in lobum obtusum (nec uncum) productis; tarsis (4-articulatis) elongatis, angustis, filiformibus, art.° 1mo elongato, unguiculis gracilibus.

Hab. Americam australem (*prope Montevideo captus*).—*Georrhynchus.*

dd. *Oculi nulli.*

e. *Rostrum breve, latum. Antennæ brevissimæ. Scutellum distinctum. Unguiculi nulli.*

32. Corpus globoso-ovatum, convexum, nitidiusculum, parce sed longissime pilosum, testaceum, inæquale (sc. grosse sed leviter varioloso-punctatum); rostro brevi, lato, subtriangulari, apice late truncato; prothorace transverso, ad latera rotundato; scutello sat magno, triangulari (sed haud facile observando); elytris (præsertim postice) parce asperatis; metasterno breviusculo; abdominis segm.^{tis} 1mo et 2do inter se lineâ distinctâ divisis. Antennæ brevissimæ, circa medium rostri insertæ; scapo brevissimo (in scrobe auriculiformi profundâ omnino abscondito); funiculi (6-articulati) art.^{is} 1mo et 2do maximis crassis subæqualibus, sequentibus parvis, brevibus; capitulo magno, solido. Pedes breves, validi, fossorii, antici omnino et intermedii fere contigui; femoribus brevissimis; tibiis anticis ad apicem externum in lobum (vix uncum) longissimum tectiformem productis, posterioribus extus fortiter spinulosis, ad apices (externum et internum) compressis ac lobato-ampliatis; tarsis valde anomalis; anticis longe pone apicem tibiarum lobatum insertis (ergo superne haud observandis), vere 4-articulatis (art.^{us} quintus omnino abest), brevissimis, filiformibus, art.^{o} ult.^{mo} ovali et ad apicem pilis perpaucis longissimis instructo; posterioribus quasi 4-articulatis (art. ultimus et penultimus, nisi fallor, inter se omnino commiscentur, — articulum bifurcatum anomalum efficientes), art.^{is} 2do, 3^{tio} et ult.^{mo} ad angulos anticos longissime spinoso-lobatis (articulos tres longe bifurcatos formantibus), — art.^{o} 1mo brevi, intra apicem tibiarum compressum abscondito, 2do majore longiore et, una cum 3^{tio} (minore graciliore), lobis duobus longissimis spiniformibus aucto, 4to (nisi fallor) minuto, inter spinas tertii immerso, et in ultimum (apice bifurcatum, sed haud unguiculatum) omnino suffuso.

Hab. ins. Canarienses (ad radices plantarum, in arenosis aridis submaritimis crescentium, fodiens). —

Onycholips.

ee. *Rostrum longius, gracilius. Antennæ longiores. Scutellum nullum. Unguiculi magni.*

33. Corpus longo-fusiforme, nitidiusculum, profunde sed parce sculpturatum, fere calvum (sc. setulis brevibus valde remotis postice saltem, parcissime obsitum), rufo-piceum; rostro elongato, subparallelo sed in medio sensim

angustiore; prothorace ovali (ad latera æqualiter rotundato); elytris elongato-ellipticis basi truncatis, ad latera versus apicem utrinque carinæformibus; metasterno brevissimo; abdominis segm.^{tis} 1mo et 2do (illo longissimo) inter se arctissime connatis, necnon late profundeque concavis. Antennæ elongatæ, mox pone apicem rostri insertæ; scapo elongato; funiculi (6-articulati) art.^{o} 2do sequentibus sensim longiore, reliquis submoniliformibus; capitulo maximo, abrupto, distincte 3-annulato. Pedes valde incrassati, anteriores leviter, sed postici latissime separati; tibiis compressis, a basi gracili gradatim late triangulariter dilatatis, sed extus versus apicem longe excavatis (excavatione, saltem in posterioribus, dense pectinato-setosâ); tarsis brevissimis, latis, crassis, subtus longe pilosis, 4-articulatis (certe haud pseudotetrameris), art.^{is} 1mo, 2do et 3^{tio} brevibus, æqualibus, transversis, submoniliformibus, ult.^{mo} paulo majore, ovali, unguiculis maximis armato.

Hab. Europam australem (*sub lapidibus et cæt. fodiens*).— *Raymondionymus.*

34. Corpus fere ut in *Raymondionymo*, sed minutissimum, paulo depressius ac sensim magis setuloso-pilosum, necnon pallidius (sc. clare testaceum), subtranslucidum, atque in specie typicâ (sc. *A. carinulatâ*) multo minus profunde sculpturatum; rostro paulo minus elongato; antennis (in specie typicâ) ab apice sensim remotius insertis, funiculi (6-articulati) art.^{is} 1mo et 2do conspicue longioribus, hôc sequentibus sensim longiore (nec subrotundato); abdominis segm.^{tis} 1mo et 2do minus profunde concavis. Pedes (licet robusti) minus incrassati, tibiis posterioribus solum triangulariter (et minus late) dilatatis, anticis conspicue angustioribus subintegris (sc. extus versus apicem paululum truncatis,—nullo modo excavatis).

Hab. Europam australem (*in Sardiniâ capta*).— *Alaocyba.*

V. *Funiculus 7-art.* . . . . . Subfam. *Cossonides.*

in Tetracoptus (4-*art.*), *in* Pentamimus *et* Tomolips (5-*art.*), *et in* Hexarthrum (6-*art.*) *exceptis.*

(*Tibiis apice uncinatis, rariss. inarmatis; tarsis pseudotetrameris.*)

f. *Oculi nulli.*

35. Corpus elongato-ovatum, convexum, subopacum, parce sed longe pilosum, rufo-brunneum; rostro-brevius-

culo, crassiusculo, subparallelo sed in medio sensim contracto ; prothorace (elytris angustiore) ovato basi truncato ; elytris ovatis basi late emarginato-truncatis, substriatis ac minutissime asperatis ; metasterno breviusculo. Antennæ breviusculæ, mox ante medium rostri insertæ ; funiculi art.° 2do haud sequentibus longiore. Pedes validi, ad basin ut in *Phlœophago* (sc. antici fere contigui, intermedii paulo distantiores, postici parum remoti) ; tibiis subfossoriis, compressis, unco apicali magno obtuso, ad angulum internum in spinam productis ; tarsis art.° 1mo longiusculo, 3^tio^ simplici.

Hab. ins. Maderenses (*in ins. Portu Sancto capta*).—*Lipommata.*

ff. *Oculi distincti.*

g. *Scutellum aut nullum, aut obsoletum.*

h. *Metasternum brevissimum.*

36. Corpus longe fusiformi-ovatum, depressiusculum, calvum, pallidulum ; rostro elongato, parallelo, gracili, arcuato, oculis (conspicue superioribus) parvis sed prominulis ; prothorace (elytris angustiore) inæquali, sc. plus minus tricarinato et longe pone apicem profunde constricto ; elytris ovato-ellipticis ; abdominis segm.^tis^ 1mo et 2do (illo longissimo) inter se arctissime connatis ac longitudinaliter impresso-concavis. Antennæ elongatæ, longe ante medium rostri insertæ ; scapo elongato ; funiculi (laxi) art.° 2do sequentibus longiore ; capitulo abrupto. Pedes longiusculi, subgraciles, antici paululum, intermedii latius, postici latissime separati ; tibiis elongatis, gracilibus, unco apicali parvo et valde inflexo ; tarsis breviusculis, art.° 1mo vix elongato, 3^tio^ lato bilobo, unguiculis magnis.

(Genere *Cotaster* entomologicis confusum ; sed differt, teste *C. uncipes*, corpore majore depressiore pallidiore et nudo, nec setis obsito, rostro longiore graciliore, oculis minoribus ac magis superioribus, prothorace inæquali plus minus tricarinato et antice constricto, nec convexo æquali, antennis longioribus gracilioribus ac magis versus apicem rostri insertis, funiculi magis laxi art.° 2do longiore, capitulo magis abrupto, pedibus, præcipue tibiis, longioribus gracilioribus, unco apicali minore et magis inflexo, tarsorum art.° 3^tio^ latiore et distincte bilobo, unguiculisque multo majoribus.)

Hab. Europam australem, et Africam borealem.—*Styphloderes.*

37. Corpus ovatum, convexum, subopacum, parce pubescens (in elytris setis elongatis suberectis obsitum), piceum ; rostro longiusculo, cylindrico, subgracili, subarcuato, oculis subprominulis ; prothorace subovali, convexo, antice fere haud constricto ; elytris convexis, ovatis basi truncatis, ad latera rotundatis, pone medium prothorace latioribus ; metasterno brevissimo, et, una cum abdominis segm.^to^ 1mo (breviusculo), late subconcavis. Antennæ ante medium rostri insertæ ; scapo subarcuato, gradatim valde clavato ; funiculi art.° 2do haud sequentibus longiore ; capitulo haud abrupto. Pedes crassiusculi, ad basin fere ut (sed postici paulo magis separati quam) in *Phlœophago* (sc. antici subcontigui, intermedii sensim distantiores, postici remoti) ; tarsis breviusculis, art.° 1mo vix elongato, 3^tio^ paulo latiore sed fere simplici, unguiculis minutissimis.

(Genus primâ facie *Acalles* simulans, et in hâc familiâ insignum corpore convexo, ovato, subopaco, parce sericato atque in elytris setis elongatis suberectis obsito. Aliter conspicuum est rostro longiusculo cylindrico, metasterno brevissimo, abdominis segm.^to^ 1mo minus quam in *Cossonidis* typicis elongato, unguiculisque minutissimis.)

Hab. Europam australem (*in Croatiâ captus*).—
Cotaster.

38. [Corpus oblongum, elongatum, inæquale (antice et subtus subvariolosum), nigrum vel brunneo-nigrum ; rostro robusto, subquadrangulari, arcuato, a fronte profunde strangulatim diviso ; oculis parvis, transversis, demissis ; prothorace elongato-subquadrato, antice breviter et subito constricto ; elytris prothorace haud latioribus, basi leviter arcuatim emarginatis, profunde punctato-striatis ; metasterno brevissimo. Antennæ ante medium rostri insertæ ; funiculi art.° 2do sequentibus longiore ; capitulo parum abrupto, subgloboso. Pedes anteriores ad basin anguste separati ; tibiis gracilibus ; tarsis brevissimis, filiformibus.

Hab. Americam borealem.]— *Lymantes.*

39. [Corpus ovale, minute pubescens, brunneum ; capite parvo, sat profunde immerso ; rostro elongato, subgracili, subcylindrico, leviter arcuato ; prothorace parvo, elytris multo angustiore, subgloboso, antice leviter constricto ; elytris ovalibus, convexis. Antennæ pone apicem rostri

insertæ, subgraciles; funiculi art.° 2do sequentibus sensim longiore. Pedes longiusculi; tarsis art.° 3^tio^ bilobo.

Hab. Europam (*in Transylvaniâ captum*).]— *Aparoprion.*

40. [Corpus ovale, convexum, nitidum, glabrum, metallico-tinctum, antice minus sculpturatum; capite parvo; rostro brevi, robusto, cylindrico; oculis parvis, rotundatis; prothorace conico; elytris ovalibus, antice arcuatim subemarginatis; metasterno brevissimo. Antennæ graciles, in medio rostri insertæ; funiculi art.° 2do sequentibus longiore; capitulo parvo, acuminato. Pedes anteriores anguste separati; tarsis art.° 1mo breviusculo, 3^tio^ sat magno, bilobo.

Hab. ins. Sandwich, juxta Honolulu degens.]— *Oodemas.*

hh. *Metasternum breve* (*vix brevissimum*).

41. Corpus fusiforme vel elliptico-ovatum, convexum, sæpius subopaculum (rarius omnino nitidum) sed tamen plus minus metallico-tinctum, minus sculpturatum, calvum; rostro, antennis, metasterno (brevi) pedibusque fere ut in *Phlœophago* (sc. funiculi art.° 2do sequentibus conspicue longiore), sed prothorace magis conico, fere esculpturato, basi haud marginato, prosterno (pone coxas anticas) distinctius carinulato, pedibus ad basin (præsertim posticis) sensim magis separatis, tarsorumque art.° 1mo paulo minus elongato, necnon 3^tio^ latiore ac distinctius bilobo.

Hab. ins. Maderenses.— *Caulotrupis.*

42. Corpus sæpius ovatum, convexum, nitidiusculum, calvum (interdum parce pilosum); rostro plus minus longiusculo, graciusculo, parallelo, (rarius brevi crassiusculo); prothorace sæpius subovali basi truncato, ad latera rotundato, antice integro (haud constricto); scutello interdum punctiformi, observando (licet ægerrime); metasterno breviusculo. Antennæ subgraciles, circa vel mox ante medium rostri insertæ; scapo breviusculo, curvato; funiculo art.° 2do sequentibus sensim (rarius vix) longiore. Pedes breviusculi, subgraciles, antici fere contigui, intermedii paulo distantiores, postici parum remoti; tarsis longiusculis, gracilibus, art.° 1mo elongato, 3^tio^ sæpius minute bilobo.

Hab. Europam, et ins. Atlanticas.— *Phlœophagus.*

gg. *Scutellum plus minus conspicuum.*

i. *Corpus æneo-piceum.*

43. Corpus oblongo-cylindricum, nitidiusculum, sericatum, æneo-piceum; rostro crassiusculo, parallelo, oculis demissis; prothorace subovato basi late truncato, antice subintegro; scutello parvo, sed parum distincto, sub-perpendiculari; mesosterno (inter coxas intermedias) minute cariniformi; metasterno brevi. Antennæ longiusculæ, graciles, mox ante medium rostri insertæ; scapo longiusculo, curvato; funiculi art.° 2do sequentibus sensim longiore; capitulo sat magno, abrupto. Pedes longiusculi, anteriores conspicue magis approximati quam in *Rhyncolo* et paululum magis etiam quam in *Phlœophago* (sc. antici fere omnino contigui, et intermedii anguste separati); tarsis elongatis, gracilibus, art.° 1mo elongato, 3^tio^ minute bilobo.

Hab. ins. Maderenses, et ins. Azoricas.—

Pseudophlœophagus.

ii. *Corpus nunquam æneo-tinctum.*

k. *unco tibiali obsoleto.* (*Oculi maximi.*)

44. Corpus breviter oblongum, crassum, convexiusculum, nitidiusculum, pallidulo-sericatum, piceum sed in elytris rufo-testaceum; rostro breviusculo, crassiusculo, parallelo, oculis maximis ac parum prominentibus; prothorace (elytris multo angustiore) parvo, subovali-quadrato basi truncato, submalleato-inæquali sed antice vix constricto; scutello valde distincto, subquadrato; elytris breviter cylindricis, basi undulatim truncatis; metasterno brevissimo; abdominis segm.^tis^ 1mo et 2do subæqualibus, et lineâ haud valde distinctâ divisis. Antennæ elongatæ, graciles, in medio rostri insertæ; scapo longiusculo; funiculi (elongati, laxi) art.° 2do sequentibus sensim longiore; capitulo elongato, angusto, acuminato. Pedes elongati crassi, ad basin fere ut in *Pseudophlœophago* (sc. antici contigui, intermedii angustissime separati, et etiam postice haud latissime distantes); tibiis inarmatis, sc. unco apicali obsoleto (i. e. in anticis minuto brevissimo incurvato, sed in posterioribus, præsertim posticis, vix observando); tarsis elongatis, crassis, art.° 1mo elongato, 3^tio^ lato, valde et pro funde bilobo, unguiculis magnis et multo divergentibus.

(Genus unco tibiali obsoleto inter *Cossonidas* anomalum, et præcique conspicuum corpore breviter oblongo convexo crasso sericato et in parte pallidulo, rostro breviusculo crassiusculo parallelo, oculis maximis, prothorace parvo

inæquali et elytris multo angustiore, metasterno brevissimo, antennis elongatis gracilibus, funiculo elongato laxo, capituloque elongato angusto, pedibus elongatis crassis, anticis contiguis et etiam intermediis minime separatis, tarsisque elongatis crassis, art.° 3^tio^ latissime profundeque bilobo.)

Hab. Australiam meridionalem.— *Thaumastophasis.*

kk. *unco tibiali* (*in* Amorphocero, Lipancylo, Aoro *et* Xenocnema *exceptis*) *plus minus conspicuo.*

l. *oculis subinferioribus, superne vix observandis.*

m. *Corpus pubescens, piceum.*

45. Corpus angustum, cylindricum, depressiusculum, nitidiusculum, longe sed parce pubescens, rufo-piceum; rostro angustulo, parallelo, ad basin a fronte evidenter diviso tamen haud constricto; oculis subinferioribus, demissis; prothorace ovato-triangulari, antice sat profunde constricto; elytris parallelis; metasterno elongato, et postice, una cum abdominis segm.^to^ 1mo, longitudinaliter leviter concavo; abdominis segm.^tis^ 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ mox ante medium rostri insertæ, valde hirsutæ; scapo breviusculo, recto, robusto; funiculi articulis (1mo excepto) submoniliformibus, 2do haud sequentibus longiore; capitulo sat magno, abrupto. Pedes breviusculi, omnes ad basin (etiam antici) late separati (sc. antici late, intermedii etiam latius, postici paulo latius quam int., distantes); tarsis art.° 1mo longiusculo, 3^tio^ fere simplici.

(Genus conspicuum corpore angusto, parallelo, cylindrico, sed vix convexo, rufo-piceo, et sat longe sed parce fulvo-piloso; capite convexo, esculpturato, rostro angustulo parallelo, oculis subinferioribus, i. e. late separatis, fere e visu superne absconditis; elytris dense et grosse striato-punctatis; prothorace antice constricto; metasterno elongato, coxisque omnibus conspicue distantibus.)

Hab. Indiam australem (*a Malabar missum*).— *Himatium.*

46. Corpus angustulum, subcylindricum, subopacum, piceum sed squamis setisque magnis subcinereis plus minus vestitum; capite sub-immerso; rostro angusto, elongato, fere parallelo (postice vix crassiore), recto, ad basin a fronte evidenter diviso tamen haud constricto; oculis subinferioribus, demissis (i. e. supra late separatis, sed subtus subapproximatis); prothorace ovato-triangulari, antice

leviter constricto; scutello minuto; elytris (prothorace sensim latioribus) subparallelis; metasterno longiusculo; abdominis segm.^{tis} 1mo et 2do lineâ impressâ parum distinctâ divisis. Antennæ subgraciles, in medio rostri insertæ, valde hirsutæ; scapo breviusculo; funiculi articulis (1mo excepto) parvis, submoniliformibus, 2do brevi; capitulo magno, abrupto. Pedes crassi, squamosi, anteriores parum et æqualiter separati, postici late distantes; tarsis art.^{o} 1mo longiusculo, 3^{tio} paulo latiore et profunde bilobo.

(Inter *Cossonidas* anomalum corpore grosse subcinereo-squamoso et setoso, sed subter squamis densissime rugoseque sculpturato. Aliter exstat corpore piceo subopaco, rostro longiusculo graciusculo subparellelo, antennis in medio ejus insertis, oculis subinferioribus, sc. superne vix perspicuis, pedibusque crassis squamosis, tarsorum art.^{o} 3^{tio} bilobo.)

Hab. Borneo (*ad Sarawak captus*).— *Pholidonotus.*

47. Corpus vel angustum subcylindricum, vel paulo latius et parallelo-oblongum, subopacum, parce et breviter setulosum, piceo-nigrum; rostro angusto, elongato, parallelo, arcuato, ad basin valde strangulatim constricto (quare a fronte lineâ profundâ diviso); oculis magnis, transversis, demissis, subinferioribus (i. e. supra late separatis, sed subtus subapproximatis); prothorace (vel vix vel multo elytris angustiore) suboblongo basi truncato, antice subintegro, in disco postico foveâ valde profundâ rotundatâ notato; elytris subfusiformi-parallelis, basi bi-arcuatim truncatis, apice pygidium vix tegentibus; mesosterno postice (inter coxas posticas) in lobum curvatum obtusum producto; mestasterno brevi, antice triangulariter lobato; abdominis segm.^{tis} 1mo et 2do elongatis, inter se lineâ parum distinctâ divisis, longitudinaliter concavis. Antennæ ante medium rostri insertæ valde hirsutæ; scapo subrecto, subito clavato, et setulis elongatis perpaucis obsito; funiculi art.^{o} 2do sensim longiusculo, reliquis gradatim multo latioribus; capitulo magno, elongato, tamen haud abrupto. Pedes elongati, valde robusti, antici fere contigui, intermedii angustissime separati, sed postici parum late distantes; femoribus subtus denticulo acuto medio armatis, anticis pone denticulum pubescentibus; tibiis valde arcuatis, anticis ad sed posterioribus pone apicem externum subfasciculatim pectinato-setosis; tarsis art.^{o} 1mo longiusculo, 3^{tio} lato et conspicue bilobo.

(Corpore plus minus setuloso, rostro elongatulo gracili arcuato necnon a fronte profunde strangulatim diviso,

oculis valde demissis subinferioribus, prothorace in disco postico foveâ rotundatâ profundâ impresso, funiculo gradatim conspicue dilatato, quare capitulo, tamen magno, minus abrupto, coxis anticis fere contiguis, femoribus omnibus subtus denticulatis, tibiisque arcuatis, ac versus apicem externum minute pectinato-setulosis inter genera vicina insigne.)

Hab. Borneo, et Java.— *Coptorhamphus.*

mm. *Corpus calvum, atrum.*

48. Corpus angustum, subcylindricum (postice vix latius), depressiusculum, nitidum, calvum, nigrum; rostro breviusculo, crasso, elongato-subtriangulari, oculis subinferioribus (sc. superne vix observandis), demissis; prothorace ovato-cylindrico, antice leviter constricto; scutello transverso; elytris (prothorace vix latioribus) subparallelis; metasterno elongato. Antennæ longiusculæ, subgraciles, ante medium rostri insertæ; funiculi art.° 2do sequentibus paululum longiore; capitulo sat magno, abrupto. Pedes longiusculi, subgraciles, ad basin (ut in *Rhyncolo*) paulo magis distantes quam in *Phlœophago;* tarsis elongatis, gracilibus, art.° 1mo elongato, 3^tio^ simplici, ult.^mo^ longissimo.

(Genus aliquo modo inter *Phlœphagum* et *Rhyncolum* situm,—cum illo antennis pedibusque gracilioribus, funiculi art.° 2do sequentibus sensim longiore, capitulo abrupto, oculis demissis, tarsorumque art.° 1mo elongato, sed cum hôc corpore minus convexo magisque parallelo, rostro robustiore, scutello conspicuo, prothorace metasternoque longioribus melius congruens. Tamen oculi subinferioribus, e visu superne absconditis, corpore angusto subcylindrico, metasternoque valde elongato etiam *Himatium* simulat. Præterea corpore nigro, nitido, calvo, rostro elongate triangulari, scutello transverso, tarsisque longissimis gracilibus, art.^is^ 1mo et ult.^mo^ elongatis, 3^tio^ parvo simplici est conspicuum.)

Hab. ins. Cape Verde (*in S. Antonio lecta*).— *Aphanommata.*

ll. *oculis superne conspicuis* (*vel lateralibus, vel subapproximatis.*)

n. *coxis anterioribus plus minus separatis.*

o. *scapo brevissimo.* (*rostro subtriangulari.*)

49. Corpus suboblongum, convexiusculum, nitidiusculum, calvum, atrum; rostro brevi, crasso, triangulari,

oculis sub-superioribus (*i.e.* supra minus separatis quam in generibus vicinis), demissis; prothorace ovali, convexo, ad latera subæqualiter rotundato, antice leviter constricto; scutello magno; elytris (prothorace conspicue latioribus) subparallelis; metasterno breviusculo, convexo. Antennæ crassiusculæ, ante medium rostri insertæ; scapo brevissimo; funiculi art.° 1mo magno, sub-obtriangulari, reliquis laxis, subæqualibus (2do vix sequentibus longiore); capitulo elongato, distincte annulato. Pedes ad basin ut in *Phlœophago* (sc. antici fere contigui, intermedii paulo magis distantes, postici latius sed haud valde separati); tarsis art.° 1mo vix elongato, 3^tio^ fere simplici.

(Genus valde alatum, necnon inter formas vicinas rostro brevi triangulari, oculis subapproximatis scapoque brevissimo anomalum, et aliquo modo generibus sub-Hylastidicis congruens; sed tamen in hôc loco nisi fallor rectius ponendum,—funiculi, capituli, prothoracis, adominisque structurâ, coxarum separatione, formâque generali *Phlœophagum* melius simulans.)

Hab. Africam australem (*a Caffrariâ missus*).—

Brachyscapus.

oo. *scapo plus minus elongato, interdum brevi, nunquam brevissimo.*

50. Corpus vel fusiformi-, vel longe subovato-cylindricum, nitidiusculum, calvum, aut nigrum aut (rarius, ut in typo) piceum; rostro plus minus elongato, graciusculo, parallelo, rarius vel in medio (subg. Amorphorhynchus, mihi) vel ad basin paulo ampliato, oculis subdemissis, sæpius in fronte haud latissime separatis; prothorace plerumque elongato, ovato-triangulari, antice leviter constricto; metasterno longiusculo, postice in medio argute canaliculato; abdominis segm.^tis^ 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ longiusculæ, subgraciles, circa medium rostri insertæ; funiculi art.° 2do vel haud vel vix sequentibus longiore; capitulo magno, abrupto, parum distincte annulato. Pedes ad basin fere ut in *Rhyncolo*, sed intermedii sensim magis distantes (sc. antici parum evidenter separati, posteriores multo magis et sæpe subæqualiter remoti); tibiis ad angulum internum in spinulam parvam productis; tarsis art.° 1mo vel haud vel vix elongato, 3^tio^ paulo latiore sed plerisque fere simplici, rarius sub-bilobo.

(Genus rostro antennisque longiusculis, graciusculis,

capituloque abrupto cum *Phlœophago* parum congruens; sed corpore sæpius majore angustiore et minus convexo, rostro, prothorace metasternoque longioribus, scutello conspicuo, funiculi art.° 2do necnon tarsorum 1mo brevioribus, coxis anterioribus latius separatis, tibiisque ad angulum internum in spinulam evidenter productis. A *Rhyncolo* præcipue differt corpore majore, rostro antennisque longioribus gracilioribus, his in medio illius insertis, capitulo majore ac magis abrupto, oculis minus prominentibus ac sæpius in fronte sensim magis approximatis, metasterno paulo magis elongato, coxisque intermediis sensim magis distantibus.)

Hab. ins. Japonicas, Malayenses, Indiam, Nov. Zealand., et cæt.— *Phlœophagosoma.*

51. Corpus angusto-fusiforme (in medio parallelum, antice et postice attenuatum), opacum, dense setuloso-squamosum; rostro longiusculo, subparallelo sed in medio paululum angustiore, oculis valde prominentibus; prothorace (elytris paulo angustiore) ovato-cylindrico; elytris parallelis; metasterno elongato. Antennæ elongatæ, ante medium rostri insertæ; scapo elongato; funiculi art.° 2do vix sequentibus longiore. Pedes longiusculi, antici ad basin parum separati; unco tibiali in posterioribus parvo; tarsis elongatis, art.° 1mo haud elongato, 3^tio^ lato et profunde bilobo, ult.^mo^ magno, elongato, et valde clavato.

(Genus inter *Cossonidas* insignum corpore dense setuloso-squamoso, angusto-fusiformi, in medio parallelo sed antice et postice acuto, antennis tarsisque longiusculis, oculis valde prominentibus, tarsorumque art.° 3^tio^ profunde bilobo.)

Hab. ins. Japonicas.— *Pholidoforus.*

52. Corpus fusiforme, opacum, profunde sculpturatum, lutosum; rostro longiusculo, subparallelo sed apicem versus leviter subattenuato, oculis demissis; prothorace (elytris angustiore) triangulari-ovato; elytris costatis, ad apicem ipsum recte truncatis; metasterno longiusculo. Antennæ mox ante medium rostri insertæ; scapo robusto; funiculi art.° 2do haud sequentibus longiore. Pedes breviusculi, robusti; tibiis ad angulum internum in spinulam parvam distinctam productis, unco apicali magno; tarsis brevibus, filiformibus, art.° 1mo haud elongato, 3^tio^ simplici.

(Genus *Calandram* aliquo modo simulans, et conspicuum corpore fusiformi, lutoso, grosse sculpturato; rostro apicem

versus obsolete subattenuato, oculis valde demissis; elytris costatis, et ad apicem ipsum recte truncatis; pedibus breviusculis, robustis, tibiis ad angulum internum spinulâ evidenter armatis, tarsisque brevibus, filiformibus, art.° 3^{tio} simplici.)

Hab. ins. Japonicas.— *Coprodema.*

53. Corpus et cæt. fere ut in *Coprodema*, sed illud paulo majus ac paulo magis parallelum (i. e. minus fusiforme), rostro paululum crassiore, oculis vix majoribus, antennis sensim longioribus, capitulo submajore, necnon mox ante medium (nec omnino in medio) rostri insertis, elytris integris (nec ad apicem truncatis), metasterno sublongiore, pedibus conspicue longioribus,—femoribus sensim minus clavatis, et tarsis (multo longioribus) haud filiformibus, art.° 3^{tio} evidenter latiore ac bilobo.

Hab. ins. Japonicas.— *Exodema.*

54. Corpus parallelo-fusiforme, opacum, dense sculpturatum, parce lutosum, necnon in elytris (oculo fortissime armato) minutissime parce pubescens, niger; rostro lato, robusto, depresso, canaliculato, subparallelo sed postice paululum contracto, oculis valde prominentibus; prothorace subovato, ad latera rotundato, mox pone apicem valde profunde constricto; elytris parallelis, sat grosse substriato-punctatis; metasterno longiusculo. Antennæ longiusculæ, crassæ, mox ante medium rostri insertæ; scapo robusto; funiculi (valde compacti, crassi, fere quasi subsolidi) art.° 2do vix sequentibus longiore; capitulo angusto, minime abrupto. Pedes validi, valde incrassati, ad basin (etiam antici) late separati; tarsis crassis, art.° 1mo haud elongato, 3^{tio} paulo latiore et sensim bilobo.

(In hâc familiâ conspicuum corpore nigro, opaco, dense sculpturato, sed hinc inde lutoso, elytris sub lente etiam minutissime et parce sericatis, rostro lato, depresso, canaliculato, oculis valde prominentibus, prothorace elytris sensim angustiore et mox pone apicem valde profunde constricto, funiculo crasso et valde compacto, capitulo angusto, pedibusque robustis, multo incrassatis.)

Hab. ins. Madagascar.— *Melarhinus.*

55. Corpus fusiforme, dense sculpturatum, nigrum; rostro breviusculo, crassiusculo, robusto, subparallelo sed postice paululum contracto, oculis prominulis; prothorace (elytris vix angustiore) elongato, triangulari-subcylindrico,

mox pone apicem constricto; elytris fusiformibus antice valde truncatis, costatis ac profunde sulcatis; metasterno longiusculo; abdominis segm.tis 1mo et 2 o inter se magis evidenter divisis quam in *Cossonidis* typicis, illo in maribus in medio rotundate impresso, impressione pilis fulvescentibus dense repletâ. Antennæ longiusculæ, circa medium rostri insertæ; scapo robusto; funiculi (valde compacti) art.o 2do haud sequentibus longiore; capitulo angustulo, nec abrupto. Pedes validi, crassi, ad basin (etiam antici) valde separati; femoribus anticis sensim crassioribus; tarsis art.o 1mo haud elongato, 3tio latiore et vix bilobo, ult.mo elongato, valde clavato.

(Genus inter *Cossonidas* insignum corpore opaco, tamen calvo et dense punctato, *Calandram* aliquo modo simulans; rostro crasso subcylindrico, prothorace magno elongato, elytris grosse sulcato-lineatis, abdominisque segmtis 1mo et 2do inter se magis conspicue divisis quam in hâc familiâ plerumque obtinet, illo in maribus in medio rotundate impresso, impressione pilis fulvescentibus repletâ.)

Hab. Ceylon, et peninsulam Malayensem.—

Psilosomus.

56. [Corpus oblongum, dense sculpturatum, nigrum; rostro longiusculo, robusto, arcuato, subparallelo sed postice paululum incrassato; elytris convexis, antice parallelis, distincte sulcatis. Antennæ in medio rostri insertæ; funiculi art.o 2do sequentibus sensim longiore. Pedes mediocres; tarsis breviusculis, art.is 1mo et 2do tenuibus, 3tio paulo latiore sed simplici.

Hab. Africam australem (*Caffrariam*).]— *Mimus.*

57. Corpus cylindrico-oblongum, latiusculum, depressiusculum, nitidum, profunde et grosse (sed haud dense) sculpturatum, vel calvum vel parce setulosum, nigrum; rostro mediocri, robusto, parallelo, oculis prominulis; prothorace magno, vel subovato vel subovali, basi valde truncato, pone apicem leviter constricto; scutello magno; elytris (prothoracis medii latitudine) parallelis, postice obtuse rotundatis, grosse striato-punctatis; metasterno breviusculo; abdominis segm.tis 3tio, 4to et ult.mo punctis magnis (in lineâ transversâ positis) marginatis. Antennæ breves, crassæ, longe pone medium rostri insertæ; scapo brevi, valde clavato sed versus apicem internum longe oblique subtruncato; funiculo brevi, crasso, valde compacto, gradatim multo latiore, art.o 1mo magno lato, 2do

haud sequentibus longiore ; capitulo parvo, brevi, minime abrupto. Pedes breviusculi, validi, antici ad basin paulo sed posteriores latius ac subæqualiter separati (etiam intermedii paululum magis remoti quam postici) ; tibiis triangularibus, compressis (i. e. a basi gracili gradatim valde dilatatis), unco apicali (saltem ad angulum externum) obsoleto, sc. brevi recto spinuliformi, sed tamen apice longe bispinosis necnon spinulâ alterâ minore (versus angulum externum) armatis ; tarsis art.° 1mo vix elongato, 3^tio^ lato et profunde bilobo.

Hab. Africam australem.— *Amorphocerus.*

58. Corpus angustulum, subcylindricum, depressiusculum, nitidiusculum, (nisi oculo fortissime armato) calvum (sed vere subtilissime, vix perspicue, parcissimeque pube adspersum), nigrum ; rostro elongato, gracillimo, cylindrico, subarcuato ; oculis magnis, oblongis, demissis, haud late separatis ; prothorace elongato-subquadrato, antice et postice valde truncato, ad latera (præsertim postice) subrecto, depressiusculo, antice integro (haud constricto), omnino æquali ; scutello subquadrato ; elytris parallelis, ad apicem ipsissimum singulatim rotundatis, ad basin conjunctim sub-biarcuatis ; metasterno mediocri ; abdominis segm.^tis^ 1mo et 2do haud valde elongatis, sed 3^tio^ 4^to^que multo minus abbreviatis quam in *Cossonidis* typicis. Antennæ graciles, mox ante medium rostri insertæ ; scapo gracili ; funiculi art.° 2do vix sequentibus longiore. Pedes longiusculi, crassi, ad basin magis approximati quam in generibus vicinis (sc. antici sub-approximati, intermedii paulo magis remoti, et etiam postici haud late separati) ; genubus anticis angulatim extantibus ; tibiis longiusculis, unco apicali obsoleto, sed ad angulum internum in spinam robustam productis ; tarsis longissimis, latis, art.° 1mo longiusculo, 3^tio^ valde dilatato et profunde latissimeque bilobo, unguiculis parvis.

(*Aoro* affinitate proximum, et inter *Cossonidas* anomalum,—cum illo congruens unco tibiali obsoleto, rostro gracillimo elongate cylindrico, oculis transversis demissis, corpore angusto parallelo et sub lente vix omnino calvo, prothorace integro, coxis minus separatis, tarsis elongatis latis art.° 3^tio^ valde bilobo, necnon unguiculis minutis ; sed differt rostro minus elongato, oculis majoribus, funiculo art.° 2do brevi, corpore depressiore, prothorace longiore, sc. elongato-subquadrato, ac multo magis parallelo, scutello majore, elytris ad apicem singulatim rotundatis, tibiis

intus haud muricatis, necnon abdominis segm.tis 1mo et 2do minus elongatis, sed tamen 3tio 4toque multo minus abbreviatis.)

Hab. Americam australem (*prope Amazon captus*).— *Lipancylus.*

59. Corpus angustulum, cylindricum, vix subnitidum, profunde sculpturatum, (nisi oculo fortissime armato) calvum, brunneo-piceum; capite fere ad oculos immerso; rostro longissimo, gracillimo, cylindrico, valde arcuato, fere haud sculpturato; oculis angustis, transversis, omnino demissis; prothorace ovali antice et postice truncato, ad latera æqualiter rotundato, convexo, antice subintegro (vix constricto); elytris parallelis, cylindricis, sat grosse substriato-punctatis; metasterno haud valde elongato. Antennæ longiusculæ, subgraciles, mox ante medium rostri insertæ; funiculi art.° 2do sequentibus multo longiore. Pedes longiusculi, ad basin multo magis approximati quam in *Cossonidis* plerisque (sc. antici fere contigui, intermedii vix magis distantes, et etiam postici leviter separati); tibiis intus parcissime muricatis, unco apicali obsolete sed anterioribus ad angulum internum spinosis; tarsis elongatis, latis, art.° 1mo longiusculo, 3tio dilatato et valde bilobo, unguiculis parvis.

Hab. Africam occidentalem.— *Aorus.*

60. Corpus parallelo-oblongum, valde depressum, subopacum, minutissime setuloso-sericatum, rufo-ferrugineum; rostro longissimo, gracillimo, parallelo, recto, scrobe rectissimo et ab apicem usque ad oculum currente; oculis maximis sed demissis, oblongis, supra haud latissime separatis; prothorace (elytris angustiore) quadrato-ovali, ad latera æqualiter subrotundato, antice leviter constricto, in disco valde et latissime depresso; scutello magno; elytris subparallelis; metasterno brevi. Antennæ elongatæ, graciles, ad apicem rostri insertæ; scapo elongato; funiculi (laxi) art.° 2do sequentibus multo longiore; capitulo elongato, angusto, conspicue 3-annulato. Pedes elongati, crassiusculi, omnes æqualiter (ergo antice late) separati; femoribus subtus denticulo minuto medio armatis; tibiis ad apicem penicillato-pubescentibus, unco parvo; tarsis elongatis, latis, art.° 1mo elongato, 3tio multo latiore et profunde bilobo, unguiculis magnis et late divaricatis.

(Inter *Cossonidas* valde anomalum, atque in rostro longissimo gracillimo lineari recto longitudinaliter strigoso,

antennis elongatis ad apicem ejus insertis, pedibus elongatis, femoribusque subtus denticulatis genera quadam *Erirhinidum* aliquo modo simulans; sed abdominis structura, coxæ anteriores late separatæ, tibiæque ad apicem uncinatæ ad hanc familiam recte pertinent. Aliter exstat corpore valde deplanato, ferrugineo, subopaco et minute sericato; funiculi laxi art.° 2do elongato; capitulo elongato, angusto, conspicue annulato; prothorace in medio latissime depresso; tibiis ad apicem penicillato-pilosis, unco parvo; tarsorumque art.° 3^tio^ lato et valde bilobo.)

Hab. ins. Americæ centralis (*in S^t^. Domingo degens*).—*Homaloxenus.*

61. Corpus angustissimum, parallelum, depressiusculum, subopacum, minus profunde sculpturatum, minute sericeum, minus durum, pallidum; rostro longissimo, gracillimo, parallelo sed postice facillime vix latiore; capite elongato, oculis parvis sed prominentibus, supra haud latissime separatis; prothorace elongato, oblongo-triangulari, antice valde constricto, (præsertim postice) canaliculato, subtus subconcavo; elytris (prothoracis medio subangustioribus) parallelis; metasterno valde elongato, antice utrinque plicâ transversâ subfoveiformi instructo; abdominis segm.^tis^ 1mo et 2do longitudinaliter concavis. Antennæ elongatæ, graciles, in medio rostri in ♂, sed in ♀ pone medium, insertæ; funiculi laxi art.° 2do sequentibus distincte longiore; capitulo elongato, abrupto. Pedes crassi, et (præsertim antici) elongati, intermedii sensim minus separati quam in *Mesites*, sc. anteriores æqualiter distantes, postici paulo magis remoti; tarsis art.° 1mo brevi, 3^tio^ valde profunde et latissime bilobo, unguiculis minutis.

(Genus valde distinctum corpore elongato, angustissimo, pallido, minutissime sericato, minus duro, ac minus profunde sculpturato; rostro longissimo, gracillimo; oculis minutis, prominulis; antennis gracilibus, funiculi art.° 2do sequentibus sensim longiore; prothorace metasternoque elongatis, illo subtus concavo, hôc convexo; pedibus elongatis, crassis; tarsorum art.° 3^tio^ valde dilatato, latissime bilobo, unguiculisque minutis.)

Hab. ins. Maderenses (*in Maderâ degens*).—*Stenotis.*

62. Corpus angustum, parallelum, depressum, subopacum, piceum sed in elytris sensim pallidius, (oculo fortissime armato) subtilissime et parcissime sericatum;

rostro subparallelo sed apicem versus (necnon in ♀ ad antennarum insertionem) facile vix sublatiore, in ♂ sat robusto, sed in ♀ graciliore et multo longiore (sc. longissimo); capite elongato, oculis parvis, subtransversis, demissis, supra haud latissime separatis; prothorace elongato, ovato-triangulari, antice valde constricto, subtus obsolete subconcavo; elytris (prothorace haud latioribus, etiam subangustioribus) parallelis; metasterno valde elongato; abdominis segm.tis 1mo et 2do lineâ bi-arcuatâ sat distincte divisis, illo in ♂ tuberculo medio magno instructo. Antennæ graciles, pone medium rostri insertæ; funiculi art.° 2do sequentibus vix longiore; capitulo angusto. Pedes (præsertim posteriores) breviusculi, anteriores late et subæqualiter distantes, postici vix magis remoti; tarsis art.° 1mo brevi, 3tio latiusculo et profunde bilobo, unguiculis minutis.

(Genus *Pentarthro* et *Stenotrupide* primâ facie subsimile, sed funiculo 7-, nec 5-articulato. Corpore depresso, rostro in ♀ elongato gracillimo, antennis longe pone medium ejus insertis, oculisque demissis cum hôc melius congruit; sed differt capite minus incrassato, rostro etiam graciliore, prothorace longiore, tarsorumque art.° 3tio latiore ac profunde bilobo.)

Hab. Americam austr. (*juxta Amazon et in Braziliâ captus*).— *Eucoptus.*

63. Corpus parallelum, subcylindricum, nitidiusculum, calvum (rarius minute pubescens), plus minus piceum vel castaneum; rostro longiusculo, in ♂ robusto subparallelo sed ad antennarum insertionem subampliato, in ♀ gracili polito et ad basin ipsam solum ampliato; capite crassiusculo, oculis transversis; prothorace oblongo, antice subito et valde constricto, vix carinulato et postice vix canaliculato; elytris parallelis; metasterno longiusculo, postice longe canaliculato. Antennæ breviusculæ, crassæ, in ♂ pone medium sed in ♀ ad basin ipsam rostri insertæ; scapo brevi, robusto, excurvato; funiculi (crassi) art.° 2do haud sequentibus longiore; capitulo sat parvo, angusto. Pedes (præsertim antici) robusti, antice ad basin parum, intermedii paulo latius, postici sat late (nec latissime) separati; tarsis art.° 1mo elongato, 3tio simplici.

(A *Rhopalomesites* et *Odontomesites* differt corpore magis convexo, cylindrico, nitido; prothorace oblongo, nec subtriangulari; capite crassiore, oculis minus approxi-

matis; rostro in ♂ breviore robustiore ac magis parallelo, sc. ad antennarum insertionem vix ampliato; antennis brevioribus, crassioribus, scapo præcipue breviore ac magis excurvo, funiculo crassiore, art.° ejus 2do haud elongato, capitulo minore angustiore; metasterno paulo magis elongato; coxisque omnibus minus distantibus.)

Hab. Europam.— *Mesites.*

64. Corpus ut in *Mesites*, sed paulo minus cylindricum (sensim magis fusiforme), et paulo minus convexum, minus nitidum, sæpe minutissime sericatum; rostro in ♂ longiore, graciliore, necnon ad antennarum insertionem magis ampliato; capite minus incrassato, oculis sensim magis approximatis; prothorace ovato-triangulari (nec oblongo), antice valde profunde constricto, in ♂ (præsertim postice) canaliculato, sed in ♀ carinulato; elytris paulo minus parallelis (sc. sensim magis subfusiformibus basi truncatis); metasterno sub-breviore, et postice brevius canaliculato. Antennæ multo longiores ac graciliores, in ♂ vel ante vel circa (nec pone) medium rostri insertæ; scapo præsertim longiore, ac magis in- (nec ex-) curvato; funiculi (laxioris, gracilioris) art.° 2do multo magis evidenter elongato; capitulo majore, longiore, magis abrupto. Pedes paulo longiores, necnon ad basin sensim magis distantes; tarsorum art.° 3^tio^ latiore et evidenter bilobo (nec omnino simplici).

Hab. Europam occidentalem, et ins. Atlanticas.— *Rhopalomesites.*

65. Corpus ut in *Rhopalomesites*, sed sæpius magis depressum ac sensim magis fusiforme (sc. postice evidenter attenuatum); rostro in ♂, ab antennarum insertionem usque ad apicem, utrinque pilis elongatis fimbriato, in ♀ ad basin minus abrupte ampliato. Pedes paulo magis incrassati, intermedii ad basin sensim magis distantes; femoribus subtus in ♂ obtuse subdentatis; tarsorum art.° 3^tio^ (ut in *Mesites*) simplici.

Hab. ins. Canarienses, et ins. Cap. Verde.— *Odontomesites.*

66. [Corpus elongatum, parallelum, depressum, nitidum, setulosum, nigrum sed in elytris ferrugineum, *Mesites* simulans; rostro longiusculo, in ♂ a basi usque ad medium crassiusculo, dein graciliore, cylindrico, sed in ♀ ad basin

solum incrassato; prothorace subquadrato, elytris paulo angustiore; metasterno longitudinaliter concavo (excavatione ad utrumque latus subcarinatâ). Antennæ in ♂ breves et in medio, sed in ♀ breviores et ad basin rostri insertæ; scapo in ♂ magis clavato quam in ♀; capitulo parvo. Pedes breves, ad basin late separati; tarsis brevibus, art.° 1mo brevi, 3^tio^ latiusculo bilobo.

Hab. Africam australem.]— *Porthetes.*

67. Corpus parallelum, valde depressum, nitidum, calvum, nigrum; rostro in ♂ longiusculo et antice (ut in *Cossono*) dilatato, necnon in medio grosse canaliculato, sed in ♀ breviusculo, subgracili, depressiusculo, subparallelo sed postice gradatim paululum angustiore, integro (vix canaliculato); oculis subrotundatis, prominulis; prothorace (elytris sensim angustiore) sat parvo, brevi, subovali basi truncato, antice subito sed leviter constricto, basi trisinuato, præsertim postice carinulato et ibidem in medio impresso; scutello magno rotundato; elytris parallelis, costatis; metasterno mediocri. Antennæ (præsertim in ♂) elongatæ, crassæ, in ♂ longe ante sed in ♀ longe pone medium rostri insertæ; scapo sinuate subcompresso, valde (præsertim in ♂) sed longe clavato (quare intus postice quasi subexcavato); funiculi art.° 2do sequentibus vix longiore; capitulo magno, longissimo, parallelo-oblongo et dense velutino. Pedes antici latissime separati, sc. vix minus remoti quam posteriores, his subæqualiter distantibus; unco tibiali breviusculo; tarsis gracilibus, art.° 1mo elongato, 3^tio^ simplici, unguiculis magnis.

(Conspicuum inter genera vicina corpore parallelo et valde depresso, rostro in ♂ longiusculo antice dilatato sed in ♀ breviusculo subgracili depresso et postice gradatim subangustiore, oculis rotundatis, nec transversis, prothorace brevi, elytris grosse sculpturatis ac costatis, scapo sinuate subcompresso et præsertim in ♂ abrupte clavato, capitulo magno longissimo ac densissime velutino, coxisque anticis late separatis.)

Hab. Americam borealem (*in Mexico degens*).— *Megalocorynus.*

68. Corpus angustum, elongatum, parallelo-fusiforme, depressum, nitidum, calvum, plus minus piceum vel castaneum; rostro (a fronte convexâ conspicue diviso) elon-

gato, et (præsertim in ♀) gracili, subparallelo sed plerumque apicem versus facillime paulo sublatiore, necnon versus basin sensim facile subincrassato (tamen ad basin ipsissimam sæpius obsoletissime subcontracto); oculis transversis, demissis, supra subapproximatis; prothorace elongato, vel ovato- vel oblongo-triangulari, pone apicem valde constricto, antice plus minus obsolete carinulato et postice plus minus obsolete longitudinaliter impresso; scutello magno; elytris (prothoracis medio vix latioribus) vel elongate subfusiformibus basi truncatis, vel fere parallelis, ad apicem ipsissimum minute singulatim subrotundatis; metasterno longissimo, interdum, una cum abdominis segm.^to^ 1mo longitudinaliter concavo; abdominis segm.^tis^ 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ breviusculæ, crassiusculæ, longe pone medium (interdum etiam versus basin ut in *C. basali*) rostri insertæ; scapo breviusculo; funiculi art.° 2do haud sequentibus longiore (sæpius etiam subbreviore); capitulo angusto, haud abrupto, acuminato. Pedes breviusculi, crassi, anteriores leviter et æqualiter separati, postici magis (sed haud valde) distantes: tibiis ad angulum internum in spinam distinctam productis; tarsis brevibus crassis, art.° 1mo brevi, 3^tio^ multo latiore et profunde bilobo, ult.^mo^ brevi, crasso, conico, unguiculis minutis.

(A generibus vicinis conspicuum corpore elongato, angusto, vel parallelo-fusiformi vel parallelo, depresso, calvo; rostro longiusculo, graciusculo, antice et postice facillime plus minus latiore, a capite convexo distincte diviso; antennis conspicue pone medium ejus insertis, crassiusculis, funiculi art.° 2do brevi; oculis transversis, supra subapproximatis; prothorace metasternoque elongatis; scutello magno; coxis anterioribus æqualiter, et posticis vix magis late, separatis; pedibus crassis; tibiis ad angulum internum in spinam productis, tarsorumque art.° 3^tio^ latiusculo et conspicue bilobo, ult.^mo^ brevi, crasso, conico.)

Hab. Americam (*et borealem, et australem*).—

Catolethrus.

69. Corpus et cæt. ut in *Catolethro*, sed sensim minus depressum, antennis in medio (nec longe pone medium) rostri insertis; rostro magis parallelo (cylindrico) et etiam distinctius a fronte valde convexâ diviso, oculis valde demissis, ægerrime observandis; prothorace longiore (sc.

longissimo, ovato-cylindrico) et æquali (nec carinulato, nec canaliculato) antice minus constricto ; scutello minore ; elytris magis parallelis ; coxis omnibus æqualiter remotis, etiam anticis late separatis ; tarsisque multo minus incrassatis, art.° 3^tio^ parvo, simplici (nec dilatato, nec profunde bilobo). Corpus minutum, angustissimum, calvum, fere nigrum.

Hab. Americam australem (*in Braziliâ degens*).— *Stenotribus.*

70. [Corpus fere ut in *Catolethro*, sed rostro graciliore, cylindrico ; antennis brevioribus, gracilioribus, funiculi art.° 2do sequentibus longiore, capitulo majore, magis abrupto, breviter ovali ; prothorace antice gradatim angustiore. Pedes graciliores, tarsis art.° 3^tio^ simplici, reliquis haud latiore.

Hab. Madagascar.]— *Proëces.*

71. Corpus angustum, elongatum, parallelo-fusiforme, subdepressum, nitidum, calvum, piceum ; rostro (a fronte subconvexâ conspicue diviso) elongato, lato, subparallelo (a basi usque ad apicem facillime gradatim sublatiore), supra depresso ; oculis transversis, subdemissis, supra subapproximatis ; prothorace elongato, subtriangulari-oblongo, pone apicem valde constricto, antice obsolete carinulato et postice leviter longitudinaliter impresso ; scutello magno ; elytris (prothoracis medii latitudine) elongate subfusiformibus basi truncatis, ad apicem ipsissimum minute singulatim subrotundatis ; metasterno elongato ; abdominis segm.^tis^ 1mo (ante medium) et 2do (ad basin) lenticulis duâbus rotundatis granulorum compositis (ocellos ! simulantibus, necnon in illo majoribus ac magis remotis) instructis, 1mo longitudinaliter concavo, 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis, ult.^mo^ in medio carinato et utrinque foveolato. Antennæ breviusculæ, crassiusculæ, mox pone medium rostri insertæ ; scapo breviusculo ; funiculi art.° 2do brevi (etiam sequentibus subbreviore), capitulo angusto, haud abrupto, acuminato. Pedes valde incrassati, ad basin fere ut in *Catolethro* (sc. anteriores paulo et subæqualiter separati, postici magis sed haud valde distantes) ; femoribus posticis subtus in medio breviter fulvo-piloso-fimbriatis ; tibiis ad angulum internum in spinam valde robustam (in posterioribus latam,

bipartitam) productis, posticis arcuatis necnon intus versus basin fasciculo pilorum instructis; tarsis brevibus, valde incrassatis, art.° 1mo brevi, 3^tio^ latiore et profunde bilobo, ult.^mo^ brevi, crasso, conico, unguiculis minutis.

(*Catolethro* affinis, sed discedens corpore majore, rostro multo latiore depressiusculo necnon a basi usque ad apicem latitudine facillime crescente, antennis magis versus medium ejus insertis, prothorace minus triangulari, abdominis segm.^tis^ 1mo et 2do lenticulis 4 granularum instructis, pedibusque magis incrassatis, femoribus posticis subtus in medio breviter piloso-fimbriatis, tibiis omnibus ad angulum internum fortius spinosis, necnon posticis arcuatis, et intus versus basin fasciculo pilorum auctis.)

Hab. Americam australem (*in Brazilià degens*).—

Phacegaster.

72. Corpus angustulum, elongatum, fusiforme, convexum, nitidissimum, minus sculpturatum, calvum, nigrum sed rufo-variegatum; capite elongato; rostro (a fronte haud lineâ diviso) plus minus elongato, postice gradatim angustato, quare antice plus minus (interdum valde) latiore, et ibidem depressiusculo; oculis (longe ante marginem prothoracis sitis) subrotundatis, parum prominentibus, supra late separatis; prothorace (elytris paululum angustiore) postice subovali, antice subito et valde constricto, convexo et æquali (nec carinulato, nec impresso), subtus plus minus concavo; elytris fusiformibus basi truncatis, ad apicem ipsissimum integris; metasterno valde elongato; abdominis segm.^tis^ 1mo et 2do inter se omnino suffusis, 3to, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ longiusculæ, crassæ, vel in medio vel mox ante medium rostri insertæ; scapo longiusculo, robusto; funiculi (crassi, compacti) art.° 2do sequentibus etiam sub-breviore; capitulo elongato, angusto, haud abrupto, acuminato. Pedes elongati, crassi, antici late sed posteriores paulo magis ac subæqualiter separati; tibiis ad angulum internum in spinam robustam (in posterioribus latam, bipartitam) productis; tarsis brevibus, valde incrassatis, art.° 1mo breviusculo, 3^tio^ lato dilatato et valde profunde bilobo, ult.^mo^ breviusculo subconico, unguiculis parvis.

(Genus valde conspicuum corpore magno, fusiformi, subconvexo, minus sculpturato, politissimo, necnon nigro rufoque variegato; capite elongato, valde exserto; rostro

versus apicem gradatim plus minus late dilatato, interdum antice latissimo spatuliformi; antennis crassis, et circa medium ejus insertis, funiculi art.° 2do brevissimo, capitulo angusto acuminato; tibiis posterioribus ad angulum internum in spinam valde robustam productis; tarsisque breviusculis, crassissimis, art.° 3^tio^ lato et profunde bilobo.)

Hab. ins. Malayenses (*in Nov. Guinea et Sula capta*).— *Glœodema.*

73. Corpus angustulum, elongatum, fusiforme, convexum, nitidissimum, minus sculpturatum, calvum, atrum; capite elongato; rostro breviusculo, lato, depressiusculo, et [an in utroque sexu?] fere parallelo; oculis parum prominentibus, late separatis; prothorace (elytris paululum angustiore) elongato, cylindrico-ovato, antice constricto, subconvexo, æquali, subtus leviter concavo; elytris fusiformibus basi truncatis; metasterno elongato; abdominis segm.^tis^ 1mo et 2do inter se omnino suffusis. Antennæ longiusculæ, crassæ, conspicue ante medium rostri insertæ; scapo breviusculo, robusto; funiculi (crassi, compacti) art.° 1mo crasso lato, 2do sequentibus haud longiori; capitulo elongato, angusto, haud abrupto, acuminato. Pedes crassi, valde robusti, antici parum anguste sed posteriores latius ac subæqualiter (tamen haud valde) separati; tibiis crassis, rectis, ad angulum internum in spinam robustam (in posterioribus sub-bipartitam, sed in anticis longissimam acutam horizontalem) productis, anticis intus pone apicem longe subemarginatis et ibidem fortiter ciliatis; tarsis brevissimis, valde incrassatis, art.° 1mo breviusculo, 3^tio^ crasso sed simplici, ult.^mo^ brevissimo conico, unguiculis parvis.

(Præstans corpore fusiformi, minus sculpturato, politissimo, atro; rostro breviusculo, lato, fere parallelo; antennis crassis, et ante medium ejus insertis; pedibus valde incrassatis, anticis anguste separatis; tibiis anticis ad angulum internum in spinam longissimam acutam horizontalem productis, et pone spinam fortiter ciliatis; tarsisque brevissimis, crassissimis, art.° 3^tio^ simplici, ult.^mo^ brevissimo et valde conico.)

Hab. Madagascar.— *Glœoxenus.*

74. Corpus angustum, elongatum, parallelum, cylindricum, convexum, nitidum, calvum, nigrum sed rufo-variegatum; capite lato, convexo, subelongato; rostro brevius-

culo, lato, vel parallelo vel [an character sexualis?] antice gradatim paulo latiore; oculis subrotundatis, prominentibus, late separatis; prothorace (in medio latitudine elytrorum) elongato, triangulari-subcylindrico, antice valde constricto, subconvexo et æquali (nec carinulato, nec impresso), subtus in medio [an character sexualis?] profunde et subito excavato-concavo, postice grosse marginato; scutello parvo; elytris fere parallelis, basi marginatis, ad apicem ipsissimum utrinque subrecurvo-marginatis; metasterno longissimo; abdominis segm.^{tis} 1mo et 2do inter se omnino suffusis. Antennæ crassæ, vel in medio vel mox ante medium rostri insertæ; scapo robusto, excurvato; funiculi (crassi, compacti) art.° 2do sequentibus etiam subbreviore; capitulo elongato, angusto, haud abrupto, acuminato. Pedes longiusculi, crassi, omnes ad basin subæqualiter separati; tibiis (valde robustis, anticis biflexuosis) ad angulum internum in spinam robustam (in posterioribus sub-bipartitam) productis, cavernâ apicali (pro tarsorum receptione) magnâ et valde apertâ; tarsis brevibus, et valde incrassatis, art.° 1mo breviusculo, 3^{tio} latiore et profunde bilobo, ult.^{mo} brevi, conico, unguiculis minutis.

(Conspicuum inter genera vicina corpore sat magno, angusto, elongato, cylindrico; capite rostroque latis, hôc breviusculo, in ♀ parallelo, sed in ♂ antice paulo latiore; elytris antice rufis; coxis omnibus subæqualiter separatis; pedibus longiusculis, crassis; tibiis valde robustis, cavernâ apicali magnâ et late apertâ, anticis biflexuosis; tarsisque brevibus, crassis, art.° ult.^{mo} brevi, conico.)

Hab. ins. Malayenses (*in Tondano et cæt. captus*).—*Exonotus.*

75. Corpus angustum, elongatum, parallelo-fusiforme, subdepressum, nitidum, calvum, nigrum (interdum rufo-variegatum); rostro (a fronte haud diviso) vel elongato vel breviore, subparallelo sed pone medium (versus antennarum insertionem) obsolete facillime subincrassato, rarius [an character sexualis?] antice gradatim latiore; oculis magnis, subroduntatis, prominentibus, supra late separatis; prothorace triangulari-ovato, pone apicem leviter constricto, æquali (nec carinulato, nec impresso), postice tenuiter marginato; elytris (prothoracis medii latitudine) fere parallelis, basi apiceque haud marginatis; metasterno elongato; abdominis segm.^{tis} 3^{tio}, 4to et ult.^{mo} punctis magnis (in lineâ transversâ positis) postice margi-

natis. Antennæ longiusculæ, crassiusculæ, mox pone medium rostri insertæ ; funiculi art.° 2do haud sequentibus longiore ; capitulo angustulo, haud abrupto. Pedes breviusculi, crassi, antici parum late sed posteriores latius ac subæqualiter separati ; tibiis ad angulum internum in spinulam distinctam productis ; tarsis brevissimis, crassis, art.° 1mo brevi, 3^tio^ vix latiore sed distincte bilobo, ult.^mo^ brevissimo, crasso, conico, unguiculis minutis.

(Corpus *Catolethrum* aliquo modo simulans, sed minus depressum ; rostro paulo magis parallelo et haud a fronte diviso ; oculis majoribus, magis rotundatis, magis prominentibus, ac latius separatis ; prothorace omnino æquali, nec carinulato, nec impresso ; scutello subminore ; elytris ad apicem integris, nec singulatim subrotundatis ; coxis anterioribus, præsertim intermediis, latius separatis, quare posterioribus, nec anterioribus, subæqualiter distantibus ; tarsisque etiam brevioribus art.° ult^mo^ brevissimo.)

Hab. ins. Japonicas et Malayenses.— Pseudocossonus.

76. Corpus et cæt. ut in *Catolethro*, sed rostro crassiore et omnino parallelo (nec antice et postice sublatiore), atque haud a fronte diviso ; capite majore, ac magis exserto, oculis rotundatis, subprominentibus (nec transversis, demissis), necnon in fronte multo latius separatis ; prothorace minus elongato (sc. antice et postice magis truncato), sensim convexiore, æquali (nec carinulato, nec postice impresso) ; elytris magis parallelis (nec facile gradatim subattenuatis), et ad apicem ipsissimum integris (nec singulatim subrotundatis) ; antennis in medio (nec conspicue pone medium) rostri insertis, scapo multo longiore, capituloque magis abrupto ac minus acuminato ; coxisque intermediis latius separatis (sc. posterioribus, nec anterioribus, subæqualiter distantibus).

(A *Pseudocossono* differt, inter alia, corpore depressiore, prothorace breviore, sc. antice et postice magis truncato, oculis minoribus, antennis in medio, nec pone medium, rostri magis paralleli insertis, tarsisque longioribus, art.° ult.^mo^, tamen brevi, sensim minus abbreviato.)

Hab. Indiam orientalem.— Catolethromorphus.

77. Corpus angustulum, parallelum, depressiusculum, nitidum, calvum, pallidulum, *Catolethromorphum* aliquo modo simulans, sed multo minus ; rostro parum robusto

(ut in illo) et omnino parallelo, tamen paulo minus elongato; oculis magnis, sed subdemissis, sat late distantibus; prothorace triangulari-ovato, antice minus constricto, æquali (nec carinulato, nec postice impresso); elytris parallelis; metasterno longiusculo; abdominis segm.^{to} 1mo (in 2^{dum} omnino suffuso) obsolete longitudinaliter concavo, 3^{tio}, 4to et ult.^{mo} punctis maximis (in lineâ transversâ positis) postice marginatis. Antennæ crassiusculæ, mox pone medium rostri insertæ; scapo longiusculo, robusto, excurvato; funiculi (brevi, crassi, compacti) art.° 2do brevissimo, fere e visu abscondito, capitulo elongato, magno, sed haud valde abrupto. Pedes crassiusculi, posteriores (nec anteriores) subæqualiter distantes (sc. intermedii late separati, etiam sublatius quam postici); tibiis ad angulum internum in spinulam parvam productis; tarsis brevibus, crassiusculis sed subfiliformibus, art.° 1mo haud elongato, 3^{tio} angusto, simplici.

(Genus conspicuum corpore parvo, subparallelo, depressiusculo pallidulo; rostro parallelo, sat robusto, oculis magnis sed subdemissis, antennis mox pone medium ejus insertis; funiculi brevi crassi compacti art.° 2do brevissimo, fere abscondito; capitulo elongato, magno, sed haud valde abrupto; coxis intermediis late separatis; tarsisque breviusculis, crassiusculis, sed art.° 3^{tio} angusto, simplici.)

Hab. ins. Borneo (*prope Sarawak repertus*).—
Brachychænus.

78. Corpus et cæt. fere ut in *Micromimo*, sed angustius, magis parallelum, minus nitidum, atque in elytris (oculo fortissime armato) minutissime et parcissime sericatum; rostro longiore, graciliore, ac omnino parallelo (nec postice etiam subangustiore), antennis in medio (nec ante medium) ejus insertis; oculis magis rotundatis, ac valde prominentibus (nec demissis); prothorace magis triangulari, et antice profundius constricto; elytris longioribus, sed tamen postice minus acuminatis (pygidium vix omnino tegentibus); tibiis ad angulum internum spinulâ minutâ distinctius terminatis; tarsisque gracilioribus.

Hab. Americam australem (*in Braziliâ captus*).—
Stenomimus.

79. Corpus minutum, angustulum, parallelo-fusiforme, depressiusculum, nitidum, calvum, rufo-testaceum, aut piceum; rostro (haud a fronte lineâ diviso) subparallelo

(postice vix contracto), lato; oculis maximis, transversis, demissis, supra haud late separatis; prothorace elongato, triangulari-ovato, pone apicem leviter constricto, postice plus minus obsolete longitudinaliter impresso; scutello magno; elytris (prothoracis medio haud latioribus) subparallelis; metasterno longiusculo (nec valde elongato); abdominis segm.^{tis} 3^{tio}, 4to et ult.^{mo} punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ breves, crassiusculæ, mox ante medium rostri insertæ; scapo brevissimo, subito clavato; funiculi art.^{is} brevibus, 2do haud sequentibus longiore; capitulo magno, parum abrupto, acuminato. Pedes breviusculi, omnes (etiam antici) late separati et subæqualiter distantes (sc. antici vix magis approximati quam posteriores); tarsis brevibus, subfiliformibus, art.° 1mo paululum elongato, 3^{tio} simplici, unguiculis minutis.

(Genus conspicuum corpore minuto, depressiusculo, sæpius pallido; rostro brevi, lato, subparallelo, sc. postice vix angustiore; oculis maximis, transversis, sed omnino demissis; scapo brevissimo, subito clavato, et mox ante medium rostri inserto; coxis omnibus, etiam anticis, late separatis; tarsorumque art.° 3^{tio} simplici.)

(A *Catalethro* discedit corpore minore, minus elongato; rostro multo breviore, latiore, magis parallelo, necnon haud a fronte diviso; oculis majoribus; antennis brevioribus, et ante medium rostri insertis; scapo multo breviore, magisque clavato; elytris ad apicem ipsissimum integris; metasterno minus elongato; coxis latius separatis; tarsisque gracilioribus, art.° 3^{tio} simplici.)

Hab. Americam (*sc. juxta Amazon, ins. Trinidad, Mexico, et cæt.*).— *Micromimus.*

80. Corpus angustulum, parallelum, valde deplanatum, politissimum, calvum, fere haud sculpturatum, in parte pallidulum; capite elongato-quadrato, angustulo, valde exserto, depresso, oculis magnis sed demissis, subtus subapproximatis; rostro brevissimo, lato, sed fere parallelo (ad basin ipsam paululum contracto); prothorace triangulari-quadrato, basi recte truncato, aut etiam subconcavo (nullo modo sinuato), ad apicem truncato et haud (aut tamen obsoletissime sub-) constricto, æquali; scutello magno; elytris parallelis, ad basin subarcuatis (nec sinuatis); metasterno longiusculo; abdominis segm.^{tis} 1mo et 2do inter se omnino suffusis. Antennæ mox ante basin

rostri insertæ; scapo longissimo, excurvato, versus apicem subcompresso et longe subitoque clavato sed intus oblique truncato (angulum internum efficiente); funiculo brevissimo, compacto, a art.° 2do (brevi) gradatim multo latiore; capitulo maximo, abrupto, elongato, ovali, dense velutino. Pedes (præsertim posteriores) breves, politissimi, omnes ad basin latissime separati (sed antici paulo minus quam intermedii, et his paulo minus quam postici); femoribus valde clavatis; tibiis brevibus; tarsis subgracilibus, filiformibus, art.° 1mo longiusculo, 3^tio^ simplici.

(*Cossoni* formam primâ facie simulans, sed tamen genus anomalum corpore supra et subtus valde deplanato, politissimo, fere esculpturato; capite elongato-quadrato, valde exserto, depresso; oculis magnis, sed demissis, subtus subapproximatis; rostro brevissimo, lato, subparallelo, antennis versus basin ejus insertis, scapo excurvato, angulatim clavato, funiculo brevissimo, capituloque maximo; prothorace æquali, antice haud constricto, postice recte truncato; coxis omnibus latissime separatis; femoribus valde clavatis; tibiisque brevibus.)

Hab. ins. Malayenses (*in Morty et Gilolo degens*).—*Glœotrogus.*

81. Corpus fere ut in *Glœotrogo*, sed paulo magis (tamen levissime) sculpturatum, ac minus politum; capite (ut in illo, elongato et valde exserto, tamen) multo angustiore, convexiore, ovali (nec deplanato, subquadrato), oculis supra magis approximatis; rostro multo longiore, convexiore, et postice magis gracili, quare haud parallelo (sc. antice lato, sed pone antennarum insertionem subito et longe contracto); prothorace etiam magis quadrato, et ad apicem ipsum evidentius constricto, tamen valde æquali; abdominis segm.^tis^ 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ paulo longiores quam in *Glœotrogo*, necnon conspicue ante (haud pone) medium rostri insertæ; scapo rectiore et minus excurvato, tamen leviter biflexuoso, apicem versus minus clavato, et intus obsoletissime solum subtruncato (quare vix angulum efficiente); funiculi art.° 2do sensim longiore; capitulo (ut in illo) maximo. Pedes sensim longiores; femoribus (saltem posterioribus) paulo minus clavatis; tibiisque minus abbreviatis.

Hab. ins. Malayenses (*in Coram et Batchian captus*).—*Homalotrogus.*

82. Corpus valde deplanatum, ut in genere præcedenti (et paulo magis *Cossoni* formam simulans), sed majus, multo profundius sculpturatum; rostro magis parallelo, postice multo minus contracto (quare antice haud subito ampliato); capite sensim crassiore (tamen angusto, ovali, exserto); antennis in medio (aut tamen vix ante medium) rostri insertis, scapo intus versus apicem vix evidentius subangulatim truncato, funiculique art. 2do brevi (nullo modo sequentibus longiore); prothoraceque (punctis perpaucis maximis ubique notato) longiore, magis oblongo, necnon ad basin evidentius sub-trisinuato.

Hab. ins. Malayenses (*in Batchian repertus*).—

Isotrogus.

83. Corpus fere ut in *Cossono*, sed valde deplanatum, paulo magis fusiforme, atque lætius variegatum; oculis paulo magis prominentibus; prothorace (nec carinulato, nec postice impresso) fere impunctato,—solum punctis perpaucis maximis, in seriebus duâbus dorsalibus positis, notato; abdominisque segm.^tis^ 1mo et 2do inter se omnino suffusis.

Hab. Nov. Guinea (*ad Dorey deprehensus*).—

Heterophasis.

84. Corpus parallelum, plus minus angustulum et depressiusculum, sæpius nitidum et calvum (rarius opacum, et rariss. minute subpubescens), plerumque grosse sculpturatum et nigrum, vel ferrugineum (rariss. lætius coloratum); rostro postice contracto, antice (ad antennarum insertionem) plus minus valde rotundato-ampliato; oculis ovalibus, sæpius demissis, supra haud latissime separatis; prothorace plus minus triangulari-quadrato, mox pone apicem sæpius subito et profunde constricto, necnon ad basin trisinuato, postice in medio plus minus carinato atque plus minus longitudinaliter triangulariter impresso; elytris parallelis, vel sensim vel vix prothorace latioribus; metasterno haud valde elongato. Antennæ pone apicem rostri insertæ; funiculi art.° 2do vel paulo vel haud sequentibus longiore; capitulo magno, abrupto. Pedes ad basin late separati (plerumque anteriores subæqualiter, et postici paulo magis, distantes); tarsis art.° 1mo plus minus elongato, 3^tio^ simplici.

Hab. fere in toto orbe terrarum.— *Cossonus.*

85. Corpus fere ut in *Cossono*, sed minutissime et parce setuloso-pubescens, supra omnino opacum; rostro multo latiore, brevi, et fere parallelo (sc. postice solum subangustiore); capite latiore, oculis magis rotundatis, magis prominentibus, ac multo latius separatis; prothorace (antice constricto, et postice profunde bisinuato) paulo breviore ac magis ovali (i. e. minus quadrato), necnon ubique grosissime densissimeque æqualiter punctato, postice sensim carinulato sed haud impresso; elytris elongatis, valde parallelis; metasterno longiusculo. Pedes intermedii ad basin latius (sc. latissime) distantes, omnes late separati; femoribus (præsertim posterioribus) minus clavatis; tibiis paulo longioribus ac subflexuosis; tarsisque longioribus, unguiculis majoribus.

Hab. peninsulam Malayensem (*in Singapore captus*).—*Hyponotus.*

86. Corpus fere ut in *Cossono*, sed rostro breviore, crassiore ac fere parallelo (sc. postice vel haud vel vix angustato); oculis majoribus, magis rotundatis, ac magis prominentibus, supra paulo latius separatis; funiculi art.° 2do vel haud vel vix sequentibus longiore; prothorace magis æqualiter densiusque punctato, postice vix carinulato et haud longitudinaliter impresso; metasterno longiore; coxis omnibus minus late separatis; tarsorumque art.° 3^tio^ minus simplici (sc. minutissime sub-bilobo).

Hab. Americam borealem (*in Mexico degens*).—*Borophlœus.*

87. Corpus crassum, sub-parallelum, convexum, nitidum, calvum, grossissime sculpturatum, atrum; capite lato, crasso, oculis demissis et haud latissime separatis; rostro brevi, lato, crasso, subtriangulari-parallelo (sc. postice vix latiore), supra in medio paululum gibboso; prothorace (elytris vix angustiore) elongato, cylindrico-oblongo postice subrecte truncato (vix sinuato), antice integro (nec constricto), grossissime subæqualiter punctato, carinulâ obsoletâ mediâ læviore; scutello magno; elytris parallelis, ad basin subrecte truncatis (nec 3-sinuatis); metasterno breviusculo. Antennæ crassiusculæ, mox ante medium rostri insertæ; scapo breviusculo; funiculi (haud compacti) art.° 2do sequentibus vix longiore; capitulo ovali, abrupto. Pedes robusti, antici parum late sed posteriores latius ac subæqualiter separati; tibiis (anticis simplicibus) longius-

culis, unco apicali magno; tarsis art.° 1mo elongato, 3^tio^ simplici, unguiculis magnis.

(Genus præstans corpore magno, crasso, robusto, convexo, subparallelo, cylindrico, grossissime sculpturato; capite rostroque latis, crassis, hôc brevi, subtriangulari-parallelo; oculis demissis, haud latissime separatis; prothorace antice haud constricto et postice subrecte truncato, grossissime et æqualiter punctato; necnon scapo breviusculo.)

Hab. Americam australem (*in Chili degens*).— *Pachytrogus.*

88. Corpus angustulum, sub-parallelum, convexiusculum, nitidum, calvum, grosse sculpturatum, atrum; capite latiusculo, oculis subrotundatis, prominentibus, et late separatis; rostro brevi, lato, subquadrato, parallelo (sc. postice vix angustiore), postice plus minus breviter canaliculato (canaliculâ e foveâ minutâ frontali surgente); prothorace (pone medium vix latitudine elytrorum) elongato, cylindrico-ovato, antice profunde constricto, postice leviter trisinuato, parce punctato (punctis in parte grossis, et in parte minutis), plus minus carinato, et postice ad basin ipsissimam sub-biimpresso; elytris subfusiformi-parallelis; metasterno mediocri. Antennæ crassiusculæ, ante medium rostri insertæ; scapo breviusculo; funiculi (crassi subcompacti) art.° 2do paululum sequentibus longiore; capitulo sat magno, sed haud valde abrupto. Pedes (præsertim antici) robustissimi, valde incrassati, antici ad basin parum (nec late), posteriores paulo latius et æqualiter, separati; femoribus (præsertim anticis) valde incrassatis; tibiis brevibus, latis, et (præsertim anticis) subcompressis, unco apicali maximo, anticis (pone angulum spiniformem internum) etiam lamellato-ampliatis ac posterius concavis, posterioribus triangularibus; tarsis art.° 1mo paulo elongato, 3^tio^ simplici.

(Inter *Cossonides* conspicuum pedibus robustissimis, valde incrassatis; tibiis brevibus latis subcompressis, anticis intus pone angulum internum triangulariter lamellato-ampliatis. Aliter exstat rostro brevi, lato, subquadrato, postice in medio canaliculato; capite multo latiore quam in *Cossono*, oculis magis prominentibus latiusque separatis, prothorace longiore, coxisque omnibus, præsertim anticis, minus distantibus.)

Hab. ins. Malayenses.— *Stereoborus.*

89. Corpus et cæt. ut in *Stereoboro*, sed capite sensim minus lato; rostro (rarius longiore et pone antennas angustato) ad apicem subtus plus minus barbato, postice grosse et profunde sed breviter lateque fisso (nec subtenuiter canaliculato); oculis paulo magis prominentibus; funiculi magis compacti art.° 2do sub-breviore; tibiarumque anticarum lamellâ internâ a spinâ robustâ (pone angulum internum spiniformem sitâ) surgente.

Hab. ins. Malayenses, et Ceylon.— *Stereotribus.*

90. Corpus (angustulum, magnum, parallelum, nitidum) et cæt. fere ut in *Stereoboro* et *Stereotribo*, sed illud paulo majus, ac minus atrum (sc. antice et subtus piceum); rostro sensim longiore et antice magis rotundato-ampliato (quare postice, ut in speciebus *Stereotribi* ins. Ceylon colentibus, conspicue angustato), postice profunde canaliculato (canaliculâ e foveâ frontali rotundatâ profundâ surgente); oculis prominentibus, et paululum minus late separatis; prothorace (ut in illo, magno) magis oblongo, ac minus grosse sculpturato, basi rectius truncato (vix sinuato); elytris magis parallelis, basi rectius truncatis (nec bi-arcuatis). Antennæ magis incrassatæ (sc. crassissimæ), ac remotius ab apice rostri quam in generibus illis insertæ; scapo sub-tortuoso, valde robusto, et valde clavato; funiculo latissimo, tamen articulis inter se profunde divisis (nec ut in *Stereotribo* arcte adpressis), 2do haud sequentibus longiore; capitulo minore (sc. parvo, et minime abrupto). Pedes paulo longiores minusque incrassati (tamen valde robusti) quam in generibus illis; tibiis longioribus, necnon ad angulum internum spinâ subhorizontali distinctius armatis (spinâ in posterioribus, ut in generibus circa *Phacegaster*, sub-bipartitâ), anticis intus minus evidenter lamellato-ampliatis.

Hab. Australium meridionalem.— *Stereomimetes.*

91. Corpus angustulum, parallelum, cylindricum, convexum, nitidissimum, calvum, lævius sculpturatum, atrum; capite lato, crasso, oculis magnis, valde anterioribus, subrotundatis, parum prominentibus, latissime separatis; rostro brevissimo, latissimo (capite vix angustiore), sed tamen parallelo, ad apicem subtus plus minus barbato, necnon emarginatione superiore apicali (pro labri receptione) lobo centrali plus minus repletâ,—lobo vel (ut in gen. *Stereotribo*) magno sed in medio fisso (quare rostro

ad apicem ipsissimum minute trifisso), vel (ut in *S. pacifico*) brevissimo, obsoleto, integro ; rostro vel simplici, vel postice in medio tuberculo centrali armato ; fronte vel integrâ, vel (ut in *S. pacifico*) minutissime brevissimeque incisâ (lateribus fissuræ in tuberculos duos minutissimos incrassatis) ; prothorace (pone medium circa latitudine elytrorum) valde elongato, subconico, antice leviter constricto, postice subrecte truncato (vix sinuato), æquali ; elytris parallelis, cylindricis ; metasterno longiusculo. Antennæ in medio rostri insertæ ; scapo brevi ; funiculi (crassi, sed vix compacti) art.° 2do haud sequentibus longiore ; capitulo sat magno, longiusculo. Pedes breviusculi, et (præsertim antici) robustissimi, antici parum, posteriores paulo latius et subæqualiter separati ; femoribus (præsertim anticis) valde incrassatis ; tibiis brevibus, latis, unco apicali maximo, anticis (pone angulum spiniformem internum) compresso-ampliatis, parte ampliatâ e spinâ robustâ secundâ surgente, posterioribus triangularibus ; tarsis art.° 1mo paulo elongato, 3^tio^ simplici.

(Genus præstans corpore parallelo, cylindrico, convexo, nitidissimo, atro, minus profunde sculpturato ; rostro brevissimo, latissimo, sc. capite vix angustiore, sed parallelo, supra interdum tuberculo armato, apice sæpius minute trifisso, et subtus interdum barbato ; prothorace magno, valde elongato, cylindrico-conico, æquali, postice subrecte truncato ; elytris parallelis, breviter cylindricis ; oculis latissime separatis ; pedibusque robustissimis, femoribus anticis valde incrassatis et tibiis anticis in dimidio basali interno compresso-ampliatis,—parte auctâ e spinâ robustâ, pone angulum internum spiniformem sitâ, surgente.)

Hab. ins. Malayenses, et ins. "Fiji."— *Stereoderus.*

92. Corpus angustum, elongatum, fusiforme (antice et postice attenuatum), nitidum, calvum, nigrum ; rostro elongato, subgracili, vix parallelo, sc. postice (pone antennas) paulo angustato, quare antice obsolete latiore ; oculis rotundatis, prominentibus, parum late separatis ; prothorace (in medio vix elytris angustiore) elongato, subovali, antice profunde constricto, æquali (nec carinulato, nec impresso) ; scutello parvo ; elytris postice gradatim attenuatis, ad apicem ipsissimum minute singulatim subrotundatis ; metasterno elongato. Antennæ elongatæ, in medio aut mox ante medium rostri insertæ ; scapo longiusculo ; funiculi art° 2do haud sequentibus lon-

giore ; capitulo ovali, haud valde abrupto. Pedes elongati, antici late et posteriores latius sed vix æqualiter separati (sc. postici sub-magis distantes quam intermedii) ; tibiis ad angulum internum in spinulam parvam productis ; tarsis art.° 1mo haud elongato, 3^tio^ paulo latiore et profunde bilobo.

(Genus conspicuum corpore magno, elongato, angusto, fusiformi, antice et postice attenuato, nigro ; rostro elongato, subgracili, in dimidio postico paululum angustato ; oculis rotundatis, et valde prominentibus ; elytris ad apicem ipsissimum obsolete singulatim rotundatis ; antennis pedibusque elongatis ; coxis anticis late separatis ; tarsorumque art.° 3^tio^ conspicue bilobo.)

Hab. ins. Malayenses, et Ceylon.— *Oxydema.*

93. Corpus elongatum, fusiforme, nitidiusculum, *Oxydema* propinquans, sed subconvexius, minus angustatum, postice minus attenuatum, et omnino minus nigrum ; rostro paulo breviore, et postice minus distincte (tamen evidenter) angustato ; antennis (ut in illo, in medio aut mox ante medium rostri insertis) paulo gracilioribus, funiculi art.° 2do minus valde abbreviato, capituloque subminore ; oculis valde prominentibus ; prothorace (elytris conspicue angustiore) minus elongato, et antice minus profunde constricto ; scutello minus transverso ; metasterno paulo minus elongato ; tarsisque gracilioribus, art.° 3^tio^ minore, angustiore, et minutius (tamen evidenter) bilobo.

Hab. Australiam.— *Notiosomus.*

94. Corpus angustum, elongatum, parallelo-fusiforme, depressum, subnitidum, calvum, nigrum ; rostro longiusculo, subgracili, parallelo ; oculis rotundatis, parum prominentibus ; prothorace (in medio latitudine elytrorum) elongato, triangulari-ovato, antice profunde constricto, postice in medio late et leviter longitudinaliter impresso ; scutello parvo ; elytris parallelo-fusiformibus basi truncatis ; metasterno elongato, et, una cum abdominis segm.^tis^ 1mo et 2do (inter se distincte divisis), paulo longitudinaliter concavo ; abdominis segm.^tis^ 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis, ult.^mo^ in medio [an character sexualis?] foveâ rotundatâ profundâ impresso. Antennæ elongatæ, in medio aut mox ante medium rostri insertæ ; funiculi art.° 2do haud sequentibus longiore ; capitulo parvo, valde angusto, acuminato.

Pedes elongati, crassiusculi, antici ad basin parum, intermedii latius, sed postici paulo magis separati; tibiis ad angulum internum in spinulam parvam productis; tarsis art.° 1mo haud elongato, 3^tio^ lato et profunde bilobo, ult.^mo^ breviusculo.

(Corpore magno, angusto, elongato, subfusiformi, nigro, rostro longiusculo, tarsorumque art.° 3^tio^ conspicue bilobo genus *Oxydema* simulans; sed differt, inter alia, corpore depressiore, postice minus attenuato, densius minutiusque sculpturato, rostro subbreviore et omnino parallelo, nec postice angustato, capitulo multo minore, minus abrupto necnon apice acuminato, prothoraceque postice in medio late sed leviter impresso, nec æquali.)

Hab. Australiam meridionalem.— *Aphanocorynes.*

95. Corpus et cæt. fere ut in *Aphanocorynes*, sed illud magis depressum ac magis parallelum, elytris ad apicem ipsissimum (ut in *Rhyncolo reflexo*, Europæ) singulatim recurvis; antennis mox pone medium (nec in medio) rostri insertis, capitulo multo majore, latiore, ac magis abrupto, sc. ovali (nec acuminato); oculis majoribus; prothorace magis triangulari (postice elytrorum latitudine), omnino æquali, antice levius constricto; elytris parallelis, ad basin rectissime truncatis; pedibus minus incrassatis, anterioribus ad basin magis et æqualiter separatis, posticis etiam subminus distantibus quam anteriores; tibiis rectioribus; tarsorumque art.° 3^tio^ multo minore ac fere simplici (nec lato et profunde bilobo), ult.^mo^ longiore.

Hab. ins. Malayenses.— *Orthotemnus.*

96. Corpus angustum, elongatum, vel parallelum vel subfusiformi-parallelum, nitidum, calvum, nigrum; rostro breviusculo, robusto, parallelo sed ad basin plus minus obsolete substrangulatim contracto; oculis magnis, prominentibus; prothorace elongato, triangulari-cylindrico, antice parum constricto, æquali; elytris vel parallelis vel subfusiformi-parallelis; metasterno elongato; abdominis segm.^to^ 1mo interdum longitudinaliter concavo, 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ vel in medio vel mox pone medium rostri insertæ; funiculi (compacti) art.° 2do haud sequentibus longiore; capitulo parvo, haud abrupto, sed tamen haud acuminato. Pedes breviusculi, antici parum sed posteriores latius et subæqualiter separati; tibiis ad angu-

lum internum in spinulam distinctam productis; tarsis crassiusculis, art.° 1mo haud elongato, 3^tio^ fere simplici, vel in anticis obsolete bilobo.

(*Rhyncolum* propinquans, sed tamen forma generalis cum generibus præcedentibus melius congruit. A *Rhyncolo* discedit corpore sæpius majore, longiore, angustiore et magis parallelo, minus convexo minusque ovato, nitidiore et atro; rostro parallelo sed ad basin plus minus obsolete etiam substrangulatim contracto, nunquam ibidem subcrassiore; oculis majoribus, ac magis prominentibus; prothorace metasternoque longioribus; capitulo paulo minus angusto minusque acuminato; coxisque anterioribus sensim magis separatis.)

Hab. ins. Japonicas, et Ceylon.— *Macrorhyncolus.*

97. Corpus angustum, elongatum, fusiforme (antice et postice acutum), convexum, subnitidum, calvum, nigro et rufo-ferrugineo variegatum; capite parvo, angusto; rostro breviusculo, subgracili, vix parallelo, sc. postice gradatim paulo angustiore, ad apicem recte truncato; oculis haud valde prominentibus, ac haud late separatis; prothorace (elytris sensim angustiore) elongato, cylindrico-triangulari, antice longe et profunde constricto, æquali, dense punctulato; scutello parvo; elytris fusiformibus basi truncatis, plus minus pallidis; metasterno subelongato; abdominis segm.^tis^ 1mo et 2do inter se omnino suffusis, 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ subgraciles, vel in medio vel mox ante medium rostri insertæ; funiculi art.° 2do brevi; capitulo ovali, sat abrupto. Pedes elongati, subgraciles, antici parum late sed intermedii multo latius, quare posteriores æqualiter, separati; femoribus ad basin gracilibus; tibiis subflexuosis, anticis ad angulum internum in spinulam distinctam productis; tarsis elongatis, art.° 1mo longiusculo, 3^tio^ paulo latiore et evidenter bilobo, ult.^mo^ elongato, in ♂ clavato sed in ♀ subconico.

(A generibus vicinis conspicuum corpore fusiformi, convexo, in elytris plus minus pallido et nigro-picto; capite angusto, oculis haud late separatis; rostro breviusculo, robusto, sed haud valde lato, postice obsolete angustiore, apice recte truncato; prothorace dense punctulato, antice valde angustato ac longe constricto; antennis pedibusque subgracilibus, his elongatis, intermediis ad basin late separatis, quare posterioribus æqualiter distantibus;

femoribus ad basin gracilibus; tibiis obsolete subflexuosis; tarsisque elongatis, art.° 3^{tio} minute bilobo, ult.^{mo} elongato, in ♂ clavato sed in ♀ subconico.)

Hab. ins. Japonicas.— *Heterarthrus.*

98. Corpus angustum, elongatum, cylindricum, convexum, subnitidum, calvum, nigrum; capite lato, crasso; rostro breviusculo, lato (capite paulo solum angustiore), vel parallelo vel [an character sexualis?] antice gradatim obsolete angustiore; oculis prominentibus, late separatis; prothorace (pone medium latitudine elytrorum) elongato, triangulari-cylindrico, antice longe constricto, æquali, subtus antice [an character sexualis?] concavo; scutello parvo, sæpius sub-perpendiculari; elytris parallelis; metasterno longissimo; abdominis segm.^{tis} 1mo et 2do sæpius longitudinaliter leviter concavis. Antennæ crassiusculæ, in medio vel mox ante medium rostri insertæ; funiculi (crassi, compacti) art.° 2do sequentibus etiam sub-breviore; capitulo parvo, subrotundato. Pedes elongati, crassiusculi, antici parum late sed posteriores latius ac subæqualiter separati; tibiis anticis valde biflexuosis, omnibus ad angulum internum in spinulam parvam productis; tarsis elongatis, art.° 1mo longiusculo, 3^{tio} paulo latiore et evidenter bilobo, ult.^{mo} longiusculo et [an character sexualis?] conico, interdum basi valde incrassato.

(Genus *Heterarthro* affinis, sed corpore majore, magis parallelo, cylindrico, et omnino nigro; capite multo latiore, crassiore, magisque exserto, quare oculis multo latius separatis; rostro multo latiore et interdum omnino parallelo; prothorace minus triangulari; scutello sæpius subperpendiculari; antennis crassioribus, funiculo magis compacto et gradatim multo latiore quare capitulo minus abrupto; pedibusque magis incrassatis, tibiis anticis multo magis flexuosis, tarsorum art.° ult.^{mo}, an in utroque sexu?, interdum multo crassiore ac magis conico.)

Hab. ins. Malayenses.— *Conarthrus.*

99. Corpus et cæt. fere ut in *Conarthro* sed illud minus parallelum, aut magis fusiforme, levius sculpturatum, et rufo-ferrugineum, antice et postice paulo obscuratum (nec omnino nigrum), rostro in utroque sexu parallelo, minus lato ac paulo magis arcuato, scutello horizontali (nec declivi), prothorace ad basin paululum minus recte truncato

(sc. obsolete subsinuato), elytris ad apicem ipsissimum (ut in *Heterarthro*) sæpius obsolete et minute singulatim subrotundatis, abdominis segm.^{tis} 1mo et 2do convexiculis (vix longitudinaliter subconcavis), tarsorumque art.° ult.^{mo} minus conico.

Hab. ins. Malayenses, et Ceylon.— *Eutornus.*

100. Corpus angustum, parallelum, subdepressum, subnitidum, calvum, rufo-piceum aut fere piceo-ferrugineum; rostro brevi, latissimo (capite vix angustiore) sed parallelo, valde arcuato, apice recte truncato; oculis maximis, valde prominentibus, late separatis; prothorace (elytris vix angustiore) elongato, ovali-cylindrico, antice leviter constricto, æquali; elytris parallelis; metasterno elongato; abdominis segm.^{tis} 3^{tio}, 4to et ult.^{mo} punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ ante basin rostri insertæ; scapo valde excurvato; funiculi (brevis, compacti) art.° 2do brevissimo, fere abscondito; capitulo sat magno, ovali, abrupto. Pedes breviusculi, ad basin omnes (etiam antici) late et subæqualiter separati; tarsis art.° 1mo brevi, 3^{tio} simplici, ult.^{mo} longiusculo, gracili.

(Conspicuum corpore parvo, parallelo, depressiusculo, piceo-ferrugineo; oculis maximis, et valde prominentibus; rostro brevi, latissimo, sc. capite vix angustiore, sed parallelo, valde arcuato, apice recte truncato; antennis versus basin ejus insertis, funiculi art.° 2do brevissimo, capitulo abrupto; coxis omnibus, etiam anticis, late et subæqualiter separatis; tarsorumque art.° 3^{tio} simplici, ult.^{mo} gracili.)

Hab. ins. Malayenses (*in Nov. Guinea et Sula captus*).— *Coptus.*

101. Corpus angustum, parallelum, convexiusculum, cylindricum, subnitidum, calvum, profunde sculpturatum, nigrum; capite lato, crasso, convexo, valde exserto; rostro brevi, latissimo (capite paululum angustiore) sed parallelo, arcuato; oculis prominentibus, latissime separatis; prothorace (pone medium latitudine elytrorum) elongato, conico-cylindrico, antice leviter constricto, æquali sed in medio tenuiter carinulato; elytris parallelis; metasterno longissimo; abdominis segm.^{tis} 1mo et 2do inter se valde suffusis, 3^{tio}, 4to et ult.^{mo} punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ elongatæ, circa medium rostri insertæ; scapo elongato, excurvato; funiculi (brevis, compacti) art.° 2do brevissimo; capitulo magno,

rotundato-ovali, abrupto, compresso. Pedes breves, antici paululum sed posteriores latius ac subæqualiter (tamen haud valde) separati; tarsis art.° 1mo paululum elongato, 3^tio^ fere simplici.

(Præstans inter genera vicina corpore elongato, angusto, parallelo, convexiusculo, profunde sculpturato; capite magno, crasso, valde exserto; rostro brevi, lato, sc. capite paululum angustiore; prothorace metasternoque elongatis, illo subconico; capitulo magno, subrotundato, compresso; coxisque, præsertim anticis, minus late separatis.)

Hab. Borneo (*prope Sarawak captus*).— *Pachyops.*

102. Corpus angustum, parallelum, convexum, cylindricum, nitidum, calvum, nigrum; capite lato, crasso, convexo, valde exserto; rostro brevi, latissimo (capite paululum angustiore) sed parallelo, arcuato; oculis valde prominentibus, latissime separatis; prothorace (pone medium elytris vix angustiore) elongato, conico-cylindrico, antice truncato subintegro (vix constricto), æquali; elytris parallelis; metasterno longiusculo; abdominis segm.^tis^ 1mo et 2do inter se parum suffusis, 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ positis) postice marginatis. Antennæ longiusculæ, mox pone medium rostri insertæ; scapo elongato, excurvato; funiculo 5-articulato, crasso, art.° 2do haud sequentibus longiore; capitulo sat magno, subrotundato, abrupto, subcompresso. Pedes crassi, antici parum sed posteriores magis ac subæqualiter separati; tibiis subflexuosis, latis; tarsis art.° 1mo paululum elongato, 3^tio^ simplici.

(Genus insignum funiculo 5-articulato, sed tamen subfamiliæ *Pentarthridum* nullo modo pertinens. Corpore sat magno, cylindrico, nigro, nitido, rostroque lato brevissimo crasso arcuato, scapoque elongato excurvato gen. *Pachyops* simulat; sed differt, inter alia, antennis paulo magis versus basin rostri insertis, funiculo 5-, nec 7-articulato, capitulo minore, scutelloque minus transverso.)

Hab. Australiam, et Tasmaniam.— *Pentamimus.*

103. Corpus et cæt. fere ut in *Pentamimo*, sed illud minus ac multo levius sculpturatum; rostro etiam subbreviore (sc. brevissimo et capite vix angustiore), antice canaliculato; prothorace submajore, sublatiore, et antice paulo distinctius constricto; scutello minore; antennis sensim brevioribus, funiculo 4- (nec 5-) articulato, capitu-

loque submajore (sc. maximo, rotundato, valde abrupto); pedibus (præsertim tibiis) brevioribus, tarsisque subgracilioribus, unguiculis minutis.

Hab. Nov. Guinea (*ad Dorey captus*).— *Tetracoptus.*

104. Corpus angustulum, vel cylindricum vel fusiformi-cylindricum, convexum, nitidissimum, calvum, atrum; capite crasso; rostro brevi, latissimo (capite vix angustiore), in ♂ valde parallelo, sed in ♀ paulo breviore et apicem versus obsoletissime facillimeque subangustiore, arcuato; oculis parum prominentibus; prothorace (elytris vix angustiore) elongato, cylindrico-ovato, antice leviter constricto, æquali; scutello vel subrotundato, vel minore et transverso; elytris parallelis; metasterno longiusculo; abdominis segmentis 1mo et 2do inter se distincte divisis. Antennæ breviusculæ, circa medium rostri insertæ; scapo excurvato; funiculi (brevis, crassi) art.° 2do haud sequentibus longiore; capitulo abrupto, subrotundato, compresso. Pedes robusti, antici late sed posteriores multo latius ac subæqualiter separati (intermedii etiam subremotiores quam postici); tarsis elongatis art.° 1mo paululum elongato, 3^tio^ angusto, simplici, integerrimo.

(Genus præstans corpore aterrimo, polito, cylindrico, minus sculpturato; capite rostroque crassis, latitudine subæqualibus, hôc brevi sed fere parallelo; antennis crassiusculis, capitulo subrotundato, compresso; abdominis segm.^tis^ 1mo et 2do inter se distincte divisis; coxisque, præsertim intermediis, late separatis.)

Hab. ins. Malayenses.— *Xestoderma.*

105. Corpus et cæt. fere ut in *Xestoderma*, sed illud paulo latius, crassius, interdum politissimum et leviter, sed interdum subopacum et grossius sculpturatum; rostro antice late canaliculato; antennis mox ante medium ejus insertis, longioribus; scapo præcipue longiore, valde excurvato et robuste clavato; capitulo majore (sc. maximo), nigrescente, et densissime velutino, nunc subrotundato nunc ovali; scutello vel minuto brevissimo transverso, vel majore ac magis rotundato; coxis intermediis paulo minus separatis (tamen posterioribus æqualiter distantibus); tarsorumque art.° 3^tio^ minus simplici, sc. præsertim in anticis minutissime cordato.

Hab. ins. Malayenses.— *Xestosoma.*

106. Corpus oblongo-cylindricum, latiusculum, calvum, subnitidum, nigrum; capite lato; rostro brevissimo, latissimo (capite paululum angustiore) sed parallelo, in medio subconcavo, postice transversim esculpturato politissimo; oculis valde prominentibus, latissime separatis; prothorace magno, convexo, subovali, ad latera subæqualiter rotundato, (in medio) elytrorum latitudine; scutello subquadrato; elytris breviter cylindricis, antice recte truncatis, postice obtusis et minutissime sed parce asperatis; metasterno abdominisque segm.^to^ 1mo (a 2do distinctius diviso) haud valde elongatis, convexis; abdominis segm.^tis^ 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ sitis) postice marginatis. Pedes omnes (etiam antici) late separati, sc. posteriores vix magis remoti quam antici necnon æqualiter distantes; tibiis (saltem anticis) subflexuosis; tarsis art.° 1mo haud elongato, 3^tio^ simplici.

(Distinctum corpore latiusculo, parallelo-oblongo, antice et postice sub-obtuso; rostro brevissimo, latissimo, sed tamen subparallelo, et postici in medio esculpturato polito; oculis prominentibus; prothorace magno, convexo, in medio latitudine elytrorum; elytris postice minute asperatis; coxisque, etiam anticis, late distantibus.)

Hab. ins. Nov. Guinea.— *Lissopsis.*

107. Corpus fusiformi-cylindricum, levius minutiusque sculpturatum, vix calvum (sc. in elytris et subtus, oculo fortissime armato, minute sericatum), subnitidum, brunneo-nigrum; capite lato; rostro brevissimo, lato sed parallelo, canaliculato; oculis valde prominentibus, latissime separatis; prothorace elytris subangustiore, subcylindrico-ovato; elytris cylindricis; metasterno abdominisque segm.^to^ 1mo (a 2do distinctius diviso) elongatis. Antennæ elongatæ, mox ante medium rostri insertæ; scapo elongato; funiculi art.° 2do haud sequentibus longiore; capitulo magno, rotundato, valde abrupto. Pedes elongati, subgraciles, ad basin valde et subæqualiter distantes (sc. etiam antici late separati); tibiis elongatis, anticis subflexuosis; tarsis elongatis, art.° 1mo elongato, 3^tio^ vix latiore sed minutissime bilobo.

(Genus præcipue insignum rostro brevissimo, canaliculato, sed parallelo; antennis elongatis, scapo elongato, funiculo brevi, capitulo magno rotundato abrupto; oculis valde prominentibus; pedibusque subæqualiter separatis, sc. anticis magis sed posticis minus remotis quam plerumque obtinet, tibiis anticis subflexuosis; tarsorum art.°

1mo elongato; corporeque subtus, atque etiam in elytris subtilissime sed parce sericato.)

Hab. ins. Japonicas (*in Kushiu captus*).— *Sphærocorynes.*

108. Corpus fusiforme, convexum, nitidum, levissime sculpturatum, calvum, atrum; rostro longiusculo (præsertim in ♂), latiusculo, robusto, postice paulo angustato, quare antice gradatim paulo latiore; oculis maximis, prominentibus; prothorace (subtus subconcavo) magno, elongato, subtriangulari-ovali, antice fere integro (sc. pone apicem levissime constricto), æquali; scutello parvo; elytris fusiformibus basi truncatis; metasterno breviusculo; abdominis segm.^tis^ 1mo et 2do inter se distincte divisis. Antennæ elongatæ, crassæ, longe ante medium rostri insertæ; scapo elongato, recto; funiculi (crassi) art.° 2do haud sequentibus longiore; capitulo abrupto, rotundato-ovali, compresso. Pedes longiusculi, crassi, ad basin omnes (etiam antici) late separati (sed intermedii latius quam antici, necnon postice latissime, distantes); tarsis elongatis, art.° 1mo paululum elongato, 3^tio^ fere simplici.

(Genus incertæ sedis, cum *Xestoderma* et *Xestosoma* corpore convexo nitido atro leviter sculpturato, capitulo abrupto compresso, prothorace magno, tarsis elongatis, abdominisque segm.^tis^ 1mo et 2do distincte divisis congruens; sed capite angustiore, rostro longiore, minus incrassato et postice angustato, corporeque fusiformi, nec parallelo, ab illis discedit. Aliter exstat oculis magnis prominentibus, scapo elongato recto, necnon prothorace antice fere integro.)

Hab. ins. Malayenses.— *Xenotrupis.*

109. Corpus cylindrico-fusiforme, convexum, calvum, antice subopacum sed postice subnitidum, nigrum; rostro longiusculo, subparallelo sed postice obsoletissime gradatim sublatiore, in ♂ valde robusto sed in ♀ graciliore; oculis valde prominentibus, exstantibus (in ♂ postice abrupte terminatis, antice gradatim declivibus); prothorace magno, valde elongato, triangulari-ovato, antice fere integro (vix constricto); scutello minutissimo, punctiformi; elytris fusiformibus basi truncatis; metasterno breviusculo, in ♀ postice in medio subconcavo et ibidem carinulâ mediâ minutâ abbreviatâ (antice subito terminatâ) instructo, in

♂ magis (una cum abdominis segm.to 1mo) concavo sed haud carinulato. Antennæ elongatæ, crassæ, mox ante medium rostri insertæ; scapo elongato, recto, et etiam a basi usque ad apicem (præsertim in ♂) valde robusto, quare minus clavato; funiculi art.o 2do haud sequentibus longiore; capitulo ovali, sed haud valde abrupto. Pedes elongati, valde incrassati, antici ad basin paululum, intermedii latius, et postici parum late separati; tarsis robustis, art.o 1mo haud elongato, 3tio latiore et evidenter bilobo.

(Genus præstans corpore fusiformi, convexo, antice subopaco sed postice subnitido; prothorace magno, valde elongato, antice vix constricto; rostro longiusculo, et præsertim in ♂ robusto; oculis valde exstantibus, et in ♂ postice abrupte sed antice facilius terminatis; scutello minuto, punctiformi; antennis pedibusque elongatis, incrassatis; scapo præcipue elongato, recto, atque etiam a basi robusto, quare minime clavato; metasternoque in ♀ carinulâ mediâ minutâ abbreviatâ, antice abrupte terminatâ, postice instructo.)

Hab. Americam australem (*in Chili degens*).—

Pachystylus.

110. Corpus elongatum, angustum, parallelum, convexiusculum, cylindricum, subopacum, haud omnino calvum (sc., oculo fortissime armato, postice et subtus minutissime parceque sericatum); rostro (valde et subito angustato, depresso, canaliculato) brevi sed parallelo, oculis valde prominentibus; prothorace suboblongo-cylindrico, antice sat profunde constricto, æquali sed in medio tenuiter carinulato; elytris elongatis, cylindricis, ad apicem singulatim rotundatis necnon ibidem minutissime asperatis; metasterno elongato; abdominis segm.tis 1mo et 2do inter se parum distincte divisis. Antennæ subgraciles, mox ante medium rostri insertæ; funiculi art.o 2do haud sequentibus longiore (tamen haud brevissimo); capitulo abrupto, subrotundato-ovali. Pedes elongati, ad basin minus distantes quam in generibus vicinis (sc. antici paululum, et posteriores paulo latius et æqualiter separati); tibiis elongatis, et (præsertim anticis) subflexuosis; tarsis elongatis, art.o 1mo longiusculo, 3tio (saltem in anticis) vix simplici, ult.mo valde elongato.

(Genus inter vicina conspicuum corpore elongato, angusto, valde parallelo, cylindrico, subopaco, dense sculpturato, necnon postice minutissime pubescenti et

asperato; rostro brevi, sed parallelo, usque a basi subito angustato; oculis valde prominentibus; capitulo subrotundato, abrupto, elytris ad apicem singulatim rotundatis; pedibus, præsertim tarsis, elongatis; tibiis, præsertim anticis, subflexuosis; coxisque præsertim anticis, minus late separatis.)

Hab. ins. Japonicas.— *Xenomimetes.*

111. Corpus cylindricum, profunde sculpturatum, calvum, subnitidum, nigrum; capite rostroque latis, crassis, hôc brevissimo sed subparallelo, oculis valde prominentibus; prothorace magno, elongato, ovato-cylindrico, pone apicem constricto, (mox pone medium) elytrorum latitudine; elytris cylindricis; metasterno abdominisque segm.^to^ 1mo elongatis. Antennæ valde incrassatæ, mox ante medium rostri insertæ; scapo breviusculo, crasso, funiculi (crassissimi, compacti) art.° 2do brevissimo, sc. præcedente fere abscondito; capitulo angusto, minime abrupto. Pedes crassi, ad basin tarsisque ut in *Rhyncolo*.

(*Rhyncolo* primâ facie simillimum, sed corpore majore, magis cylindrico, et profundius sculpturato, prothorace longiore magis cylindrico et antice evidentius constricto, rostro breviore et latiore, oculis magis prominentibus, antennisque multo crassioribus, sc. funiculo crassissimo et art.° 2do brevissimo, fere e visu abscondito.)

Hab. Europam australem, et ins. Canarienses.— *Eremotes.*

112. Corpus sæpius subovato-, aut fusiformi-cylindricum, calvum, nitidiusculum; rostro vel breviusculo crasso, vel longiore graciliore parallelo, oculis prominulis; prothorace plus minus triangulari-ovato; elytris sæpius vel ovato-, vel fusiformi-cylindricis, basi truncatis; metasterno longiusculo. Antennæ crassiusculæ, vel ante vel circa medium rostri insertæ; funiculi (plus minus compacti) art.° 2do haud sequentibus longiore; capitulo angusto, minus abrupto. Pedes sæpius crassiusculi (anteriores magis distantes quam in *Phlæophago*); tarsis robustis, art.° 1mo vix elongato, 3^tio^ vel evidenter latiore et sub-bilobo, vel simplici.

Hab. regiones varias, præcipue in Europâ et Americâ.— *Rhyncolus.*

113. Corpus et cæt. fere ut in *Rhyncolo*, sed rostro (omnino parallelo) a fronte obsolete subdiviso ; antennarum capitulo multo majore crassiore, tamen apice magis acuto, funiculo sensim minus incrassato (art.° 1mo sc. multo minore, articulisque ulterioribus brevissimis), scapoque magis clavato; oculis multo majoribus, ac supra magis approximatis; scutello submajore; elytrisque sensim magis parallelis. Tarsorum art.° 3^tio^ simplici.

Hab. in ins. Maderâ.— *Caulophilus.*

114. Corpus crassum, parallelum, latiusculum, depressiusculum, dense et argute sculpturatum, calvum sed postice minute pubescens, subnitidum, piceo-ferrugineum; rostro brevi, robusto (sed haud latissimo), parallelo, a capite lineâ diviso; oculis prominentibus; prothorace (elytris vix angustiore) magno, elongato, subquadrangulari, pone apicem profunde constricto ; elytris parallelis, costatis, basi recte truncatis; metasterno longiusculo; abdominis segm.^tis^ 1mo et 2do (præsertim hôc) haud valde elongatis atque inter se distincte separatis, hôc in planum inferiorem depresso, 3^tio^, 4to et ult.^mo^ punctis magnis (in lineâ transversâ sitis) postice marginatis. Antennæ breviusculæ, subgraciles, circa medium rostri insertæ; funiculi (valde compacti) art.° 1mo antice late truncato et intus minute subproducto, 2do haud sequentibus longiore; capitulo sat magno, abrupto, distincte annulato. Pedes breviusculi, robusti, antici parum distincte et posteriores paulo remotius ac subæqualiter (sed haud valde) separati; tibiis latis, compressis, subtriangularibus, ad angulum internum spinâ robustâ (in anticis elongatâ, subhorizontali) armatis, ad externum haud uncinatis tamen (præcipue in posterioribus) subito ampliatis, parte ampliatâ dense spinulosâ; tarsis art.° 1mo elongato, 3^tio^ vix latiore sed minute subbilobo et subtus longe piloso.

(Genus inter *Cossonidas* valde anomalum,—tibiarum structurâ necnon abdominis segm.^tis^ 1mo et 2do inter se profunde divisis cum *Hylesinidis* melius congruens, tamen, nisi fallor, ad hanc familiam vere pertinens. Præcipue exstat unco tibiali obsoleto, tamen tibiis versus apicem externum abrupte spinoso-ampliatis, necnon ad internum calcari robusto, in anticis elongato subhorizontali, munitis. Inter alia distinguiter corpore crasso parallelo latiusculo subdepresso piceo-ferrugineo ac dense arguteque sculpturato, elytrorum interstitiis costiformibus, sed costis quasi e

duâbus efformantibus, rostro breviusculo parallelo necnon a fronte conspicue diviso, prothorace magno subquadrangulari, abdominisque segm.tis 1mo et 2do minus elongatis et distincte divisis, illo convexo sed hôc in planum inferiorem adjecto.)

Hab. Novam Zealandiam (*ab Auckland missa*).— *Xenocnema.*

nn. *coxis anterioribus vel fere vel omnino contiguis.* (*oculi demissi.*)

p. *rostro brevi, triangulari-cylindrico.*

115. Corpus fere ut in *Rhyncolo* (et sc. *Hexarthrum* simulans), sed magis breviter-cylindricum, postice obtusius terminatum, prothorace convexiore, antice haud constricto, oculisque valde demissis, nec prominentibus. Antennæ (pone medium rostri insertæ) breves, glabræ; scapo præcipue brevi; funiculi articulis (1mo excepto) compactis, inter se arcte adpressis; capitulo compresso, solido, subobconico aut obtriangulari (apice recte truncato). Pedes (anteriores magis approximati quam in *Rhyncolo*) breviores; femoribus, præsertim anticis, magis clavatis et subtus quasi obtuse angulato-subdentatis; tarsis gracilioribus, filiformibus, art.o 1mo longiore, 3tio angusto, simplici. Aliter conspicuum est rostro breviusculo crassiusculo, in ♂ subparallelo, sed in ♀ breviore subtriangulari.

Hab. Europam.— *Stereocorynes.*

116. Corpus (ut in *Stereocorynes*) breviter cylindricum, postice obtuse terminatum, subcalvum (sc. oculo fortissime armato subtilissime parcissimeque sericatum), piceum; rostro brevi, vel angustulo- vel latiusculo-subtriangulari, oculis valde demissis; prothorace convexo, antice vel haud vel leviter constricto, basi fere immarginato; elytris (præsertim postice) minutissime asperatis; metasterno abdominisque segm.to 1mo (a 2do distinctius diviso) haud valde elongatis. Antennæ (circa medium rostri insertæ) brevissimæ, glabræ; scapo præcipue brevi; funiculo 6-articulato, articulis (1mo excepto) brevissimis compactis, inter se arcte adpressis; capitulo compresso, solido, subrotundato, antice interdum oblique subtruncato. Pedes (magis approximati quam in *Rhyncolo*) breves, anteriores fere contigui, et etiam postici haud late distantes; femoribus anticis conspicue clavatis; tarsis gracilibus, filiformibus, art.o 1mo

longiusculo, 3^{tio} angusto, simplici. Aliter conspicuum est rostro in ♂ paululum longiore ac magis parallelo (i. e. minus triangulari) quam in ♀.

Hab. Europam, ins. Maderenses, et ins. Japonicas.—

Hexarthrum.

117. Corpus et cæt. fere ut in *Hexarthro*, sed illud majus, minus breviter cylindricum (sc. interdum parallelo-subfusiforme, postice minus obtuse rotundatum, subproductum), ac multo grossius sculpturatum; oculis majoribus, ac magis superioribus (i. e. supra minus late separatis); prothorace magno, apice integro (nec constricto), basi distincte sed anguste marginato; elytris basi undulatim sinuatis (nec recte truncatis), ad humeros subito et acute porrectis, postice grosse sed parce asperatis, necnon interdum ad apicem ipsissimum minute singulatim subrotundatis (nec truncato-desilientibus). Antennæ (circa medium rostri insertæ) brevissimæ, crassæ, glabræ; scapo etiam subbreviore quam in *Hexarthro;* funiculo 5- (nec 6-) articulato, articulis (1mo excepto) brevibus, compactis; capitulo compresso, solido, et (ut in *Stereocorynes*) subobtriangulari, sc. antice truncato. Pedes ut in *Hexarthro* (sc. anteriores fere contigui), sed interdum tibiis anticis ad angulum internum calcari compresso bifido armatis.

Hab. Americam borealem (*in Mexico degens*).—

Tomolips.

pp. *rostro brevissimo, lato, crasso, triangulari.*

(*caput crassum.*)

q. *scutello conspicuo.*

118. Corpus vel ovato-cylindricum vel cylindricum, grosse sculpturatum, aut calvum aut subcalvum, nitidum; rostro crasso, oculis demissis; prothorace (postice elytrorum latitudine) magno, ovato-cylindrico, antice subintegro (i. e. obsolete constricto), utrinque pone medium sinuato; elytris ovato-cylindricis vel cylindricis, postice argute muricatis; metasterno longiusculo; abdominis segm.^{tis} 1mo et 2do distinctius divisis. Antennæ brevissimæ, crassæ; scapo brevissimo; funiculi (compacti) art.° 1mo lato, antice latissime truncato; capitulo magno, abrupto, rotundato. Pedes antici fere contigui, intermedii vix magis distantes, postici leviter separati; tarsis longissimis, gracilibus, fili-

formibus, art.° 1mo valde elongato, 3^tio angusto, simplici, integerrimo, ult.^mo elongato.

(*Brachytemno* affinitate proximum, sed differt corpore postice dense muricato-asperato, tarsis multo longioribus, art.° 1mo valde elongato, prothorace majore, oculisque latius separatis. A *Stenoscelide* discedit scutello distincto, prothorace longiore, tarsorumque art.° 1mo magis elongato et 3^tio integerrimo, nec minutissime bilobo.)

Hab. ins. Ceylon, et Malabar.— *Dendroctonomorphus.*

119. Corpus ovato-cylindricum, grossissime sculpturatum, calvum, nitidum; rostro crasso, oculis demissis, supra minus late separatis; prothorace magno, ovali-cylindrico, antice integro (nec constricto), utrinque pone medium obsolete sinuato; elytris cylindrico-ovatis; metasterno longiusculo; abdominis segm.^tis 1mo et 2do distinctius divisis. Antennæ brevissimæ, crassæ, glabræ; scapo brevissimo; funiculi (brevissimi, compacti) art.° 1mo magno, lato, antice latissime truncato; capitulo magno, parum abrupto, compresso, rotundato sed antice truncato. Pedes graciles, antici fere contigui, intermedii vix magis distantes, postici parum (sed haud valde) separati; tarsis gracilibus, filiformibus, art.° 1mo longiusculo, 3^tio simplici.

Hab. Europam (*præsertim australem*).—

Brachytemnus.

120. Corpus cylindricum, postice vix latius et ibidem obtusum, grossissime sculpturatum, calvum, nitidum; rostro crasso, oculis demissis, supra minus late separatis; prothorace magno, subovato-cylindrico, antice subintegro, postice in medio valde profunde triangulariter excavato; scutello magno; elytris grossissime sulcatis et alte costatis, utrinque ad apicem (obtuse truncato-rotundatum) acute cariniformibus; metasterno breviusculo; abdominis segm.^tis 1mo et 2do inter se suffusis, sed hôc in planum inferiorem depresso. Antennæ brevissimæ, crassæ; scapo (brevissimo) funiculoque (crasso, compacto) fere ut in *Brachytemno;* capitulo magno, lato, abrupto, transverso, subpoculiformi (aut fere calyciformi), ad apicem latissime recteque truncato et ibidem velutino. Pedes crassi, antici fere contigui, intermedii vix magis distantes, postici parum (sed haud valde) separati; tibiis anterioribus ad angulum internum in spinam robustam productis; uneo apicali magno; tarsis elongatis, gracilibus, art.° 1mo elongato, 3^tio angusto, simplici, integerrimo, ult.^mo longissimo.

(Genus valde distinctum corpore cylindrico, rostro brevissimo triangulari, oculis demissis ac supra subapproximatis, prothorace magno necnon postice in medio profunde arguteque triangulariter excavato, scutello magno, elytris grossissime costatis ac sulcatis, antennis brevissimis, capitulo subpoculiformi, necnon tarsis elongatis gracilibus filiformibus, art.° 3^tio^ angusto integerrimo, ult.^mo^ longissimo.)

Hab. Americam Australem (*in Brasiliâ captus*).—*Calyciforus.*

qq. *scutello ægre observando.*

121. Corpus cylindricum, dense sculpturatum, calvum, subnitidum ; rostro crasso, oculis demissis, supra minus late separatis ; prothorace (elytris subangustiore) subovato-cylindrico, antice subintegro ; elytris cylindricis, parum grosse sulcatis et costatis, antice in medio dense transversim rugulosis, postice minutissime subserratulo-asperatis ; metasterno breviusculo ; abdominis segm.^tis^ 1mo et 2do lineâ argute divisis. Antennæ breves, minus incrassatæ ; scapo brevi ; funiculi art.° 1mo magno, reliquis gradatim latioribus brevioribus, ult.^mo^ lamelliformi, necnon ad capitulum (maximum, valde abruptum, transversum, latissimum, antice velutinum) sat arcte adpresso. Pedes elongati, antici fere contigui, intermedii vix magis distantes, postici parum (sed haud valde) separati ; tarsis elongatis, gracilibus, filiformibus, art° 1mo elongato, 3^tio^ angusto integerrimo, ult^mo^ longissimo.

(Genus inter *Calyciforum* et *Stenoscelidem* situm,—illum simulans oculis magis approximatis, prothorace minus brevi, capitulo plus minus lato et anomalo, elytris sulcatis, pedibus magis robustis, anterioribus minus contiguis, tarsorumque art.° 3^tio^ integerrimo ; sed scutello fere obsoleto, necnon elytris antice subplicatulo-rugulosis et postice subasperatis cum hôc melius congruens. Tamen antennarum structurâ præcipue exstat,—funiculi sc. articulis paulatim brevissimis, ult.^mo^ etiam lamelliformi, necnon ad capitulum maximum valde abruptum transversum latissimum sat arcte adpresso.)

Hab. Americam australem (*in Braziliâ deprehensus*).—*Eurycorynes.*

122. Corpus breviter cylindricum, dense sculpturatum, calvum, subnitidum ; rostro crasso, oculis valde demissis ; prothorace brevi, cylindrico-ovato, postice valde truncato,

antice paulo constricto, necnon ad latera in medio subsinuato ; elytris antice transversim subplicato-rugosis, postice parce tuberculato-asperatis ; metasterno breviusculo ; abdominis segm^tis^ 1mo et 2do lineâ rectâ argute divisis. Antennæ breves, subgraciles ; scapo brevi ; funiculi (minus compacti) art.° 1mo magno, antice recte truncato ; capitulo rotundato-ovali. Pedes subgraciles, anteriores contigui ; tarsis elongatis, gracilibus, art.° 1mo elongato, 3^tio^ vix latiore sed minutissime bilobo, ult.^mo^ elongato.

Hab. ins. S^tæ^ Helenæ, Africam australem, et ins. Japonicas.— *Stenoscelis.*

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1. Notiomimetes (*nov. gen.*).—If the minute insect (scarcely one line in length) from which the details for the present genus have been compiled, and which I have received from Mr. Pascoe as having been captured on the sea-shore at King George's Sound in the south of Australia, be (as I think, from the structure of its abdomen, antennæ, and general facies, that it is) a veritable member of the *Cossonidæ*, it appears to me to be absolutely necessary to erect a separate subfamily to receive it ; for although in its most significant character of a 4-jointed funiculus, as well as in its fusiform outline and obsolete scutellum, it agrees sufficiently with the *Dryophthorides*, it is nevertheless so radically different from the exponents of that section in the fact of its tibiæ being free from a terminal hook, in its very widely separated coxæ (which are more remote from each other than in any Cossonid which I have yet seen), and in its pseudotetramerous feet, that I do not believe it can possibly be associated with them. Indeed its apically-unarmed tibiæ would, in my opinion, have almost sufficed to exclude it from the *Cossonidæ* altogether, was not that particular feature one of the main characteristics of the subfamily *Onycholipides*, which I have regarded (and, I cannot but think, correctly so) as aberrant, fossorial Cossonids. Moreover its immersed head and obsolete eyes, as well as its bald and rather shining surface (which is entirely free from mud-like scales), are characters which are quite unprecedented in any of the hitherto-known representatives of the *Dryophthorides*.

In other respects (each of them of considerable importance), *Notiomimetes* recedes from the *Dryophthorides*

in its exceedingly minute size; in its surface, although deeply sculptured, being very much less so than in that subfamily; in its slenderer rostrum, which has the antennæ implanted a trifle *before* (instead of behind) the middle; in its elytra being more attenuated posteriorily, and without any trace either of costæ or of the cariniform structure on either side of their apex; in its antennæ (which are much less incrassated) having their scape suddenly thickened into a very elongate apical knob, their funiculus-joints (the second one of which is appreciably longer than those which follow it) more loosely connected *inter se*, and their club larger and more abrupt; in its femora being armed beneath with a very small and indistinct tooth; and in its feet (which, as just stated, are pseudotetramerous) being broader and more abbreviated,—the first and second articulations (particularly the latter) being *transverse*, the third one deeply bilobed (but with the lobes *not* divaricating), and the ultimate one (the claws of which are very largely developed) short and thick.

2. Psilodryophthorus (*nov. gen.*).—In its 4-jointed funiculus, transverse eyes, obsolete scutellum, costate elytra, and slender, pentamerous feet, the remarkable insect for which the present genus is established, and which has been communicated by Mr. Pascoe as having been taken by Mr. Wallace at Saylee, in the north-west of New Guinea, is essentially a Dryophthorid; and yet it is an exceedingly anomalous member of its subfamily, more especially in the fact of its surface (instead of being opake and thickly besmeared with dirty, mud-like scales) being slightly shining, and almost bald,—the punctures only (or a certain portion of them) being filled-up with the particular kind of brown *deposit* which is so characteristic of the immediately-allied forms. And it is further conspicuous for its prothorax (which is largely developed) being almost as wide behind as the base of the elytra, and nearly *even*,—there being scarcely any indication of inequalities, or of an anterior constriction; and for its elytra being broadly and distinctly scooped-out in front (causing the shoulders to appear prominent, or porrect), and without any tendency to be cariniform at their apex. Its rostrum is rather short, thick, and cylindrical (being of nearly equal breadth throughout), and is *not* roughened as in the generality of the *Dryophthorides*.

3. Stenommatus (*nov. gen.*).—The very interesting little insect on which I have founded the present genus is from Mexico, and has been communicated by Mr. Fry. While possessing all the essential features of the *Dryophthorides* (as instanced by its 4-jointed funiculus, elliptical body, transverse eyes, obsolete scutellum, conspicuously 5-articulated feet, and minute claws), it recedes completely from *Dryophthorus* proper (and, therefore, *à fortiori*, from *Tetratemnus*) in several most important particulars,—especially however in its considerably longer, slenderer, more parallel and arcuated rostrum; in its very much narrower and more transverse eyes (which are so narrowed, and prolonged, beneath the head, as to be nearly confluent); and in *all* its coxæ, though particularly the four posterior ones, being more widely separated. In other respects it differs from *Dryophthorus* in its smaller size and still more elliptic outline, which is a good deal attenuated at its hinder apex; in its surface (instead of being unequally besmeared with a kind of coarse, mud-like, scaly deposit) being densely and evenly covered with an extremely fine, velvety, somewhat silken, cinereous pubescence; in its elytra *not* being cariniform at their extremity, though with their *second* costa (or raised costiform interstice) more conspicuously elevated, or prominent, behind; in its antennæ (particularly as regards the scape) being longer, and with the club more developed; and in its metasternum being a little shorter.

4. Dryophthorus (Schönherr, *Curc. Disp. Meth.* 332. 1826).—Although I have had no opportunity of examining them, I believe that the majority of the species which have been referred to *Dryophthorus* are generically distinct from the European *D. lymexylon*, which is expressly stated to be the *type* of the group; and I suspect therefore that the genus *Tetratemnus*, which I lately enunciated in order to receive an insect which was taken abundantly by Mr. G. Lewis in Japan, will be found eventually to embrace them. Be this however as it may, the genus *Dryophthorus*, as represented by its acknowledged type, is too well known to require comment; suffice it to observe that the various published diagnoses of it (not even excepting that of Lacordaire) appear to me to be at fault in their definition of some of its most important characters,—the result apparently of their having been drawn out, not from the type alone, but partially also from some of the

allied forms which I regard as *Tetratemni*. In *Dryophthorus* proper, however, the anterior coxæ are rather more approximated than in *Tetratemnus*, the body is more elliptic (or medially-widened), the prothorax is a trifle less developed, the elytra are not so broadly cariniform at their apex, and the rostrum, antennæ, and legs are appreciably longer. Nevertheless in their opake and very coarsely-sculptured surface (which is more or less densely besmeared with whitish-brown, mud-like scales), as well as in their costate elytra and 4-jointed funiculus, and in the fact of the fourth articulation of their slender, filiform feet being (instead of minute and hidden) exposed and distinct, the two genera are coincident. The *D. lymexylon*, which (as just stated) may perhaps prove to be the only *Dryophthorus* proper hitherto made known, appears to occur, more or less sparingly, throughout northern and central Europe.

5. Tetratemnus (Wollaston, *Trans. Ent. Soc. Lond.* 9. 1873).—As already implied, the members of this genus, which (if my conclusions be correct) are *extra*-European and appear to be widely spread over the world, present many characters which, as it seems to me, cannot but distinguish them generically from the European *Dryophthorus lymexylon*. Not to speak however of those species which I have had no opportunity of examining, and which may or may not prove to be *Tetratemni*, I may add that at any rate the Japanese Cossonid (the *T. sculpturatus*, Woll.) for which the group was proposed, recedes from the *D. lymexylon* in its anterior coxæ being rather more widely separated, whilst the hinder pair, on the contrary, are not quite so remote as in that insect; in its antennæ, rostrum, and legs being a little shorter; in its prothorax being proportionately a trifle more developed; in its elytra being narrower and more parallel (or laterally-compressed) and very much more broadly cariniform on either side of their apex; and in its tarsi being especially more abbreviated. Its rostrum also is less appreciably widened immediately in front of the particular point at which the antennæ are inserted. Its dark and opake surface however is as coarsely sculptured, and besmeared with the same kind of whitish-brown, mud-like scales (or, as it were, scaly *deposit*), as in *Dryophthorus* proper. Although it is probable that the group has a wide geographical range, the *T. sculpturatus* is, (for the reason already

given, the only member of it for which I am at present in a position to vouch; and that one appears to be common in the Japanese archipelago, having been met with by Mr. G. Lewis near Nagasaki in the island of Kushiu, and at Hiogo in the island of Nipon.

6. Synommatus (*nov. gen.*).—If there had been any question concerning the intimate relationship which exists between the *Dryophthorides* and *Pentarthrides* (of which I have never myself entertained the slightest doubt), it would have been thoroughly dispelled by a genus like the present one,—which, although pertaining to the latter, is at first sight so unmistakeably a Dryophthorid that it is difficult to conceive that it can belong to any other group. Yet the most essential features of that well-marked subfamily, namely a 4-jointed funiculus and ordinary pentamerous feet, are entirely wanting to it,—the former in *Synommatus* being *five*-articulate, and the latter on the usual Rhynchophorous pattern. Yet so marvellously do its external facies, sculpture, and clothing, no less than its narrow, transverse, sunken eyes, the general proportions of its rostrum and antennæ (barring the extra funiculus-joint), and the structure of its abdomen and tibiæ accord with *Dryophthorus* that one can scarcely resist the conviction that it is as much a member of the one subfamily as of the other; and my own opinion, consequently, is that it is as nearly as possible osculant between the two. Although agreeing *very* much better than *Pentacoptus* and *Chærorrhinus* do with the *Dryophthorides*, yet in conjunction with those genera (in the latter of which the elytra are cariniform on either side of the apex) it may be said to constitute a most complete passage between the subfamilies in question,—though of necessity claimed by the *Pentarthrides* (with which, however, it has far less, *primâ facie*, in common) on account of the structure of its funiculus and feet.

In the formation of its eyes *Synommatus* stands alone amongst all the Cossonideous types with which I am acquainted, the nearest approach to it being the genus *Stenommatus* from Mexico; for not only are they very much more approximated on the upper-side than is the case in any of the Dryophthorids which have hitherto been brought to light, but (which is still more anomalous) they are *completely confluent* beneath,—the two together, consequently, well-nigh encircling the entire head!

Amongst other peculiarities, our present insect is remarkable for its elliptic outline, for its long and parallel but arcuated rostrum, for its funiculus being gradually much increased in width towards the club, and for the latter being extremely large and solid,—though obliquely truncate at the inner apex, at which particular point it is densely clothed with a velvety pubescence. Its prothorax (which is but slightly constricted in front) is nearly cylindrical, and very much narrower than the elytra, the latter (which have their interstices, especially the alternate ones, costiform) are wide in front but acuminated behind, its legs are exceedingly long and thickened, its tibiæ are somewhat curved (the four hinder ones moreover being armed at their apical angle with a short but robust spine), its third tarsal joint is simple, and its front coxæ are contiguous, the intermediate ones but *very* slightly separated, and the hinder pair exceedingly remote.

The *S. confluens* is from the collection of Mr. Pascoe, and was taken by Mr. Wallace at Sarawak in Borneo.

7. Cilærorrhinus (Fairmaire, *Ann. de la Soc. Ent. de France*, 742. 1857).—I am indebted to John Gray, Esq., for an opportunity of inspecting the European genus *Chærorrhinus*, of Fairmaire; and it is not without the greatest astonishment that I have observed the excessive inaccuracy of the original diagnosis in assigning it to the *Dryophthorides*,—an inaccuracy which is quite unpardonable, and which has misled every subsequent author (including even Lacordaire) who has been content to trust to the published details, and not to examine them for himself. The *primâ facie* aspect of its opake, deeply-sculptured surface, which is besmeared with dirty, mud-like scales, in conjunction with the cariniform structure on either side of its elytral apex, are without doubt marvellously suggestive of *Dryophthorus*,—so much so indeed that it may fairly be regarded as establishing, in conjunction with *Synommatus*, a curious affinity between the *Dryophthorus*-type and the subfamily *Pentarthrides* (to which it belongs); but there the resemblance altogether ceases; and it is surprising how any careful Coleopterist could be misled by characters so eminently superficial. In real fact its funiculus is *five*-articulate, which at once removes it from the *Dryophthorides*—in which that organ is composed of only four joints. Then its feet are on the ordinary pseudotetramerous pattern, instead of as in the

Dryophthorides distinctly 5-jointed (the fourth one in that subfamily *not* being minute and hidden, but appreciable and unreceived). Yet so completely was Lacordaire led into error by the original diagnosis, that he not only accepted the insect (on account of the supposed structure of its funiculus) *as a Dryophthorid*, but naturally enough felt compelled so far to modify the characters of that well-defined subfamily so as to admit within its bounds the ordinary pseudotetramerous foot! It is, however, in reality, a normal member of the *Pentarthrides*, and is very intimately related to my genus *Pentacoptus* which was detected by Mr. G. Lewis in Japan. It completely lacks, moreover, the fusiform, or subelliptic, outline of the *Dryophthorides;* whilst its exceedingly incrassated legs and tarsi are in strange contrast with those of that subfamily—in which those parts are comparatively thin and wiry; and its eyes (instead of being sunken, transverse, and depressed) are rounded and very prominent—as in the Pentarthrideous *Pentacoptus*. Its metasternum too is shorter than that of the *Dryophthorides;* and its four anterior coxæ are perceptibly more approximated.

From the Japanese *Pentacoptus* (to which it is intimately allied), *Chærorrhinus* differs mainly in its larger size and less narrowed prothorax, in the cariniform structure on either side of its elytral apex, in its anterior coxæ being rather less widely separated, and in its first and second abdominal segments being divided by a very deeply sinuated line, instead of a perfectly straight one.

The *Chærorrhini* appear to occur in southern Europe, the genus having been first met with in Sicily.

8. Pentacoptus (Wollaston, *Trans. Ent. Soc. Lond.* 12. 1873).—In its very coarsely sculptured and opake, though somewhat *besmeared* surface, its short, broad, parallel rostrum, nearly obsolete scutellum, and costate elytra, the present remarkable little genus has almost as much in common, at first sight, as *Chærorrhinus* has, with the *Dryophthorides;* nevertheless its 5-jointed funiculus, and its small, rounded, and prominent eyes, in conjunction with its elytra showing no traces of the peculiar cariniform structure at their apex which is so marked a feature in that group, its comparatively incrassated legs, and its ordinary pseudotetramerous feet (the third joint of which is a good deal widened and bilobed), will of themselves at once remove it from the members of that sub-

family. I have already pointed out in what it principally differs from *Chærorrhinus*. It was detected by Mr. G. Lewis in the Japanese archipelago,—namely at Nagasaki, in the island of Kushiu.

9. Lyprodes (*nov. gen.*).—The single example from which I have compiled the diagnosis of the present genus, which was captured by Mr. Wallace in Sula, one of the islands of the Malay archipelago, has been communicated by Mr. Pascoe; and it is especially important as supplying another well-defined type in the subfamily *Pentarthrides*—in which the funiculus is only 5-articulate. Moreover its opake and deeply sculptured surface, which is densely besmeared with mud-like scales (or, as it were, a kind of dirty-whitish, scaly *deposit*), added to its almost obsolete scutellum, and its thick, abbreviated feet (the first joint of which is short, and the third one wide and very deeply bilobed), place it in the immediate vicinity of *Pentacoptus* and *Chærorrhinus*. It is abundantly distinct, however, from both of those groups, not merely in its much narrower and *cylindric* body (which is of nearly equal breadth throughout), but likewise in its much longer and slenderer rostrum, its less incrassated and less abbreviated antennæ (which have their second funiculus-joint appreciably longer than those which follow it), and in its more elongated metasternum (which indeed is scarcely shorter than that of *Pentarthrum* and *Stenotrupis*). Its eyes, although prominent, are less remarkably so than in *Pentacoptus;* and its elytral interstices are not so costate. In *primâ facie* aspect the insect calls to mind what we might almost suppose to be an exceedingly diminutive state of the European *Lyprus cylindricus*,—a circumstance which, however fanciful, has suggested both its generic and specific names.

10. Phlœophagomorphus (*nov. gen.*).—In its rather lengthened cylindric-ovate outline, which is narrowed in front and gradually expanded behind (the prothorax being considerably reduced in size, and much narrower than the elytra), as well as in the fact of its four anterior coxæ being (especially as regards the front pair) greatly approximated, the present genus has much the *primâ facie* aspect of *Phlœophagus ;* nevertheless its funiculus is only 5-articulate, its scutellum is conspicuous, and its rostrum and (much thicker and more abbreviated) antennæ are very

differently constructed. In reality it belongs to that particular section of the *Pentarthrides* in which the scutellum is developed and the surface bald, and it is remarkable amongst the immediately-allied forms for its somewhat convex, *Phlœophagus*-like body, for its (rather short and broad) rostrum being a good deal contracted, or as it were *pinched-in*, at the base, for its eyes being (instead of prominent) depressed, and for its four anterior legs being (as in the *Phlœophagi*) much more approximated at their base. Its surface (which is shining) is of a reddish, and slightly *pellucid*, chestnut hue,—with the head, rostrum, and femora a little darker than the rest; its antennæ are somewhat thickened, with their second funiculus-joint not at all elongate; and its feet have their first articulation (as in *Phlœophagus*) appreciably lengthened, and their third one minutely (and not very distinctly) bilobed. The example from which the generic details have been compiled is South-American (having been received from New Granada), and has been communicated by Mr. Fry.

11. Pseudopentarthrum (*nov. gen.*).—The rather obscure little Cossonid which forms the type of the present genus, is from Mexico, and has been communicated by Mr. Fry; and its *primâ facie* aspect is so much that of a minute and cylindrical *Phlœophagus*, that until I observed that its funiculus is only 5-jointed I had regarded it as a member of that group. In reality however it is very close, in affinity, to *Pentarthrum*,—from which it nevertheless recedes in its very much smaller size and shortly-cylindrical body, in its more abbreviated and relatively broader (though equally parallel) rostrum, in its prothorax and metasternum being very much less elongated, and in its anterior coxæ being much more approximate. Indeed the latter are almost exactly the same as in *Phlœophagus*, the front pair being nearly contiguous; and its prothorax also, which is oval (instead of elongate and subtriangular), is almost on the *Phlœophagus*-pattern. Its under-segments are slightly scooped-out, or concave, after the fashion which obtains in so many of the *Pentarthrides*; its surface is completely bald, black, and but very slightly shining; and the third articulation of its feet is simple.

In point of fact, however, the present genus is somewhat intermediate between *Pentarthrum* and *Phlœophagomorphus*, agreeing with the latter in its more approximated anterior coxæ; nevertheless it entirely wants the

very peculiar rostrum of the latter, which is curiously pinched-in (or suddenly constricted) at its base; and it is likewise smaller and more cylindrical (the prothorax being proportionately wider, and the elytra more parallel), of a darker hue and duller surface, with its metasternum and limbs more abbreviated, and with the first joint of its feet less elongate, and the third one more decidedly simple.

12. Xenosomatium (*nov. gen.*).—The very minute Pentarthrid for which I have established the present genus has been communicated by Mr. Pascoe, and was captured by Mr. Wallace in the Malayan archipelago. Apart from its diminutive size and 5-articulated funiculus, its greatly abbreviated second funiculus-joint, and its abrupt, largely developed club, it is at once remarkable for the structure of its tibiæ,—which are rather short, broad, and triangular, and have their terminal hook in the four posterior ones abbreviated, straight, and spiniform, but still shorter (in fact *obsolete*) in the front pair (where it is replaced by a robust and *out*wardly-curved pubescent spine which arises from the *inner* angle). This tibial modification is very peculiar, and one which I do not remember to have observed in any other Cossonideous group. In minor details *Xenosomatium* is conspicuous for its (somewhat short, broad, and arcuated) rostrum being a good deal constricted at the base, behind the insertion of the antennæ (which arise nearer to the base than is usual in the Pentarthrideous types); for its scape being long and backwardly-curved, as well as greatly clavate (though, at the same time, obliquely lopped-off at the inner apex); for its eyes being extremely large and prominent; and for its feet having their first three joints thickened and subequal, but the ultimate one rather slender. In its piceo-ferruginous hue *Xenosomatium* agrees with the majority of these immediate forms, but its sculpture is finer and lighter than is usually the case.

13. Pentarthrum (Wollaston, *Ann. Nat. Hist.* xiv. 129. 1854).—Judging from the twelve exponents which have hitherto been brought to light, the *Pentarthra* are more or less narrow and parallel insects, closely sculptured, nearly always free from scales and pubescence, either piceous or castaneous in hue, and but very slightly shining. Their eyes are prominent, and, together with the scutellum, conspicuous; their prothorax is rather large, and, like the

metasternum, elongate; their rostrum (which varies in length according to the species, but which is never very long) is robust and linear, though sometimes obsoletely constricted towards the base; and their third tarsal joint is either slightly bilobed, or else narrow and simple. In the European *P. Huttoni*, which must be regarded as the type of the genus, as well as in the *P. Zealandicum*, and in the two species from Chili, the second articulation of the 5-jointed funiculus is appreciably a little longer than those which follow it; but this is less evidently the case in the other members of the group which have hitherto been observed. The *Pentarthra* are somewhat peculiar in their habits,—attaching themselves to old planks, boards, rafters, casks, &c., on the dry, and often tinder-like, wood of which they appear to subsist (and that too, occasionally, when the latter are even partly buried in the soil); a mode of life which is equally indicated in (the nearly blind) *Amaurorrhinus*, and in *Hexarthrum* of the true *Cossonides*. On this account we may expect that their acquired areas of distribution will be found eventually to be wide; and, in accordance with this conjecture, it is a significant fact that the exponents which have hitherto been discovered should occur in countries so remote from each other as western Europe,*

* Until quite recently I had looked upon the *P. Huttoni* as peculiar to England, and indeed it has not as yet been recorded for any other country; but, having, a few weeks ago, received some *Cossonidæ* from Dr. Sharp, I was surprised to find that two typical examples (which were included amongst them), of the "*Rhyncolus Hervei*" of Allard (*Abeille*, v. 475. 1869), and which appear to have been captured at Rennes, are identical with my *Pentarthrum Huttoni*, described (fifteen years before) from examples taken near Exeter. In the Munich Catalogue the department of Finisterre is given as the locality for the "*Rhyncolus Hervei*;" so that at any rate the extreme western portion of Brittany is the only region, beyond England, in which it has hitherto been observed; and it is a significant fact, from a geographical point of view, that that particular district is exactly opposite to Devonshire—on the southern side of the Channel. Its precise places of capture in this country are, up to the present date, three,—namely, the vicinity of Exeter (where it was met with originally, at Alphington, by my nephew, the Rev. H. W. Hutton); Teignmouth (where on two or three different occasions I have myself found it), and Plymouth (where it was detected by Mr. Reading) Apart from its many other characters, the fact of its funiculus being composed of only five joints ought certainly to have prevented it from being re-described as a *Rhyncolus*—in which that organ has invariably seven articulations; but the slovenly manner in which continental entomologists are apt to mount their specimens, every limb and joint being hopelessly concealed beneath, will perhaps explain a blunder which is nevertheless utterly unpardonable. It is scarcely less fragrant however than the similar miscalculation of the funiculus-joints in *Chærorrhinus*, which has resulted in that genus having been assigned hitherto to a subfamily with which it has next to nothing in

the island of Ascension,* the Malayan and Japanese archipelagos, New Zealand, Chili, and Brazil.†

14. Sericotrogus (*nov. gen.*).—I am indebted to Dr. Sharp for the very curious little Pentarthrid for which the present genus is established; and he appears to have obtained it from Mr. Lawson, of Scarborough, by whom it was received from Auckland in New Zealand. Its distinct scutellum and largely-developed eyes place it very near to *Pentarthrum* proper; nevertheless in its smaller bulk, and slenderer and more *fusiform* outline (the elytra, as in *Amaurorrhinus*, being narrowed anteriorly), and in its somewhat *brassy* surface, which is sparingly clothed with a coarse, silken, decumbent æneo-cinereous pubescence, as well as in its less elongated metasternum (which is likewise more on the *Amaurorrhinus* type), and the widely bilobed third joint of its feet, it altogether recedes from the members of that group. Its rostrum, too, is a trifle longer, thinner, and more curved than in the majority of the *Pentarthra*, and has the antennæ implanted into it rather more conspicuously *before* the middle; the latter are a little less thickened; its head is more exserted; its prothorax (which is slightly concave beneath) is convexer, more regularly rounded at the sides (it being neither subtriangular nor subcylindrical), and is nearly free from an anterior constriction: and its elytra have apparently no tendency to be separately rounded-off, and subrecurved, at their extreme apex.

15. Stenotrupis (*nov. gen.*).—The exceedingly narrow,

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common; or than placing *Hexarthrum* amongst the *Rhyncoli*, because the articulations of the same organ were incorrectly counted! But if collectors will not take the trouble to expand their specimens so that the parts may be distinctly seen, how can we wonder at the inevitable results? Still, one would at least have supposed that before *enunciating a new form*, the microscope would, as a matter of necessity, have been appealed to.

* The presence of my *P. cylindricum* in the island of Ascension appears to have been (as indeed I always anticipated) merely accidental; for an example is now before me which was captured by Mr. Fry in Brazil, and another which was taken by Mr. Wallace in Gilolo of the Malayan archipelago. In all probability therefore it is a species which, like certain others, is liable to follow in the wake of civilization.

† The little insect from St. Helena which I described two years ago as an aberrant *Pentarthrum*, under the name of *P. subcæcum*, proves on a closer examination to be no *Pentarthrum* at all, but more intimately related to *Amaurorrhinus* (or *Mesoxenus*). It is, however, distinct from even the latter, and forms the type of my genus *Pseudomesoxenus*,—enunciated below.

and sometimes minute, insects for which the present genus is proposed appear to have been confounded hitherto with *Catolethrus*—into which they seem to have been admitted as abnormally small members; and, in accordance with this, a very pallid and diminutive one, from Cuba, has been communicated by Mr. Pascoe with a very old label appended to it, bearing the name "*Catolethrus palmeus*, Schön." There is no species, however, of supposed *Catolethrus*, so far as I can ascertain, which bears that specific title, either in the 'Genera Curculionidum' or the Munich catalogue; and I am compelled, therefore, to conclude that it is an unpublished one; yet the fact itself tends nevertheless to prove that the exponents of the present genus have, as just mentioned, been associated inadvertently with the *Catolethri*. But in reality, when closely inspected, they will be seen to belong to even a different *subfamily* from the latter,—their 5-jointed funiculus assigning them at once to the *Pentarthrides*. In addition, however, to this primary distinction, *Stenotrupis* recedes from *Catolethrus* in the insects which compose it being smaller and narrower; in their head being much longer, thicker, more oval and very much more exserted (or exposed); in their rostrum being slenderer still, a little widened towards the tip, and not appreciably divided from the forehead; in their prothorax being more triangular, and less constricted behind its apex; in their scutellum being less conspicuous; in their elytra being minutely pubescent at the apex; in their four hinder legs being shorter; in all their coxæ being *equally* separated, or apart; and in the third joint of their feet being unexpanded and simple.

In point of fact, however, *Stenotrupis* is much nearer to *Pentarthrum*,—particularly to such members of it as the *P. angustissimum*, from Japan; yet its species are still narrower and more depressed; their head is longer, thicker, oval and exserted; their rostrum (particularly in the female sex) is more elongated and slender, and appreciably widened in front; their eyes (instead of being rounded and prominent) are completely sunken, ovate and more approximated above; their prothorax is more triangular and less constricted behind its apex; their elytra are minutely pubescent at the tip; their legs, particularly the four posterior ones, are much shorter; and their coxæ are, all of them, *equally* separated.

In all probability *Stenotrupis* will be found to have a

wide geographical range, though it is perhaps more strictly *tropical* than *Pentarthrum*. At any rate one of the species now before me is from Cuba, and another was captured by Mr. Wallace in Makian—one of the islands of the Malay archipelago.

16. Microcossonus (*nov. gen.*).—The minute Cossonid (which was taken by Mr. Wallace at Saylee on the north-west coast of New Guinea, and which has been communicated by Mr. Pascoe) from which the characters for the present genus have been drawn out, is manifestly a good deal allied to *Stenotrupis*,—with which it agrees in its thickened, elongate, greatly exserted head, its narrow and parallel outline, its depressed surface, and in the fact of its legs being *equally* distant at their base. Nevertheless, if the example before me may be taken as a type of its group, the body is even still smaller than in *Stenotrupis* (the entire length being scarcely one line), but relatively not quite so slender; its rostrum (which, as in most of the members of that genus, is appreciably dilated towards the apex) is much shorter and wider; its eyes are considerably more developed, and not so flattened; its elytra are free from minute pubescence at their apex; its antennæ are inserted very much nearer to the base of the rostrum; and its coxæ (although, as in that group, *equally* separated) are distinctly more remote. Its general contour and outline are somewhat that of an exceedingly diminutive, flattened, and pallid *Mesites;* but its 5-jointed funiculus and the peculiar construction of its rostrum, as well as its numerous other features, entirely remove it from the subfamily *Cossonides*.

17. Cossonideus (*nov. gen.*).—In its comparatively large and *Cossonus*-like body (which is much depressed, deeply sculptured, parallel-fusiform in outline, and of a rather pale, though somewhat variegated, hue) the curious insect for which this genus is proposed, and which is communicated by Mr. Pascoe as having been received from Champion Bay in western Australia, seems altogether anomalous amongst the *Pentarthrides;* nevertheless its 5-jointed funiculus, and the structure of its robust, parallel rostrum are quite in accordance with the members of that subfamily. Apart, however, from the characters just enumerated, it may be known by its excessively large and

prominent eyes; by its antennæ, which have their second funiculus-joint conspicuously longer than those which follow it, being inserted about the middle of the rostrum; and by its exceedingly elongate and greatly developed legs,—the femora of which are much incrassated, or clavate, and are rather roughened with a few minute and indistinct asperities, or tubercles, on their inner surface; whilst the tibiæ are sinuated internally, and produced into a small but evident spinule at their inner angle, and the tarsi (especially their terminal articulation) are elongate.

Cossonideus may very possibly be the representative of an important Pentarthrideous form in Australia; but in external facies it nevertheless recedes greatly from the *Pentarthrides* as hitherto known; though at the same time it must be admitted that the (comparatively diminutive) *Microcossonus Wallacei*, from New Guinea, makes likewise a decided approach (though certainly a less striking one) towards the *Cossonus* and *Mesites* type.

18. Tychiodes (Wollaston, *Trans. Ent. Soc. Lond.* 16. 1873).—This is altogether one of the most curious of the Cossonideous forms with which I am acquainted,—its rather wide, subdepressed, oblong-elliptic body (which, as in most of the allied groups, is slightly shining, castaneopiceous, and free from pubescence), in conjunction with its extremely slender and cylindrical rostrum (I *believe* in both sexes), its short, *transverse* prothorax, and thickened legs, giving it more the appearance at first sight of some member of the *Erirhinides*, in the vicinity of *Tychius*, than of a Cossonid. Its antennæ (which are rather slender, and implanted considerably behind the middle of the rostrum) have their scape short and a good deal flexuose (and, as it were, obscurely *scooped*-out on the underside), and likewise the second articulation of their lax, 5-jointed funiculus considerably longer than those which follow it. Its scutellum is very conspicuous, and its feet (which are rather thick, and largely developed) have their third articulation deeply bilobed. Its metasternum is a little less elongated than is the case in *Pentarthrum, Stenotrupis, Lyprodes, Leptomimus*, and others. It was detected by Dr. A. Adams in the Japanese archipelago,—namely on the island of Awasima, off the north-west coast of Nipon.

19. Tychiosoma (*nov. gen.*).—The insect for which I have founded the present genus is from the Philippine Islands, and has been communicated by Mr. Pascoe. It is very closely allied to the Japanese *Tychiodes Adamsii*, —from which, however, it differs in being not only larger and more depressed and with the limbs longer, but likewise in having its antennæ more medially inserted, with the scape especially more lengthened, less arcuate, and without any tendency to be hollowed-out internally, and with the funiculus gradually much more widened, and consequently with the club (which is itself longer) less abrupt. In addition to which, its prothorax (which is equally small) is more *triangular*, or less transverse, as well as (together with the under-segments) extremely shining and almost unsculptured; its prosternum is clothed, between the anterior coxæ, with fulvescent pile; and its front tibiæ (instead of being simple) are slightly scooped-out towards their inner apex, the emargination being barbed posteriorly with strong fulvescent hairs.

20. Leptomimus (*nov. gen.*).—The two species now before me for which the present genus is established, and which have been communicated by Mr. Pascoe as having been obtained by Mr. Wallace in the island of Gilolo, of the Malayan archipelago, combine many very curious features which are essentially their own. In their bodies being exceedingly narrow and parallel they agree with *Stenotrupis*; but they nevertheless entirely want the elongate, thickened, *exserted* head, and the completely depressed eyes, of that genus; their rostrum too is *very* much more lengthened and slender (*not* being subdilated anteriorly); their prothorax and antennæ, as well as their second funiculus-joint, are much more elongated; the third articulation of their feet is more expanded and bilobed; and their legs (instead of being *equidistant* from each other at the base) have the intermediate coxæ rather widely separated, but the front and *hinder* pairs appreciably (and equally) more approximate. This last-mentioned peculiarity is rather anomalous amongst the *Cossonidæ*, and particularly so amongst the *Pentarthrides*. In other respects *Leptomimus* is remarkable for the opake, reddish-brown, and most closely sculptured surface of its two hitherto-discovered exponents,—one of which, moreover, is clothed with a short, setiform pubescence, whilst the other appears to be bald. In all probability the group

will be found to play an important part in the Rhynchophorous fauna of the Malay archipelago, the *L. delicatulus* having (as I am informed by Mr. Pascoe) been stated by Mr. Wallace to be common amongst the bamboos.

21. Lamprochirus (*nov. gen.*).—The superb Cossonid* for which the present genus is proposed, and which was discovered by Mr. Melliss at St. Helena, I admitted two years ago (albeit not without some hesitation) to *Microxylobius*,—having been content at the time to cite it as a large and aberrant member of that locally-important group; yet a closer inspection of its real structural details would certainly imply that it must be treated in reality as altogether distinct,—its extremely elongate and slender rostrum (which in the male sex is rather more robust and sculptured, and slightly dilated before the middle, at the insertion of the antennæ, much after the fashion which obtains in *Mesites* of the true *Cossonides*), in conjunction with its equally elongated antennæ, legs, and feet (the first of which have their second funiculus-joint, and the last their basal one, greatly lengthened), being of themselves more than sufficient to establish its claims for separation. In its fusiform outline and shining, brassy surface it might well be mistaken at first sight for a gigantic exponent of that section of *Acanthomerus* in which the femora are unarmed; but the characters above enumerated (in addition to its slightly pubescent body, as in certain of the *Microxylobii* proper) will at once distinguish it from the members of that genus. The fact, however, of its funiculus being 5-articulate, its scutellum obsolete, and its third tarsal joint deeply bilobed, added to its fusiform outline and its metallic lustre, is too significant not to indicate its manifest relationship with the other Pentarthrideous genera (*Microxylobius* proper and *Acanthomerus*) which are so remarkably developed, as regards their specific modifications, in the little island of St. Helena.

22. Acanthomerus (Boheman, *Res. Eugen.* 141. 1858).—The *Acanthomeri*, which are peculiar to the island of St. Helena, may be said to be those members of *Microxylobius* (as hitherto understood) in which the body is highly polished, less sculptured, and brassy, and totally free from any traces of even the minutest pubescence,

* *M. cossonoides*, Woll., *Ann. Nat. Hist.* 403 (1871).

and in which the second joint of the funiculus is conspicuously longer than any of those which follow it. Their rostra, too, are usually a trifle longer, and relatively a little less thickened, than in *Microxylobius* proper, with the antennæ implanted just perceptibly nearer to the apex; and in the typical members of the group (the *A. armatus*, *conicollis*, and *monilicornis*) the two hinder femora are furnished with an acute spine at the base of their *upper* edge. In the four remaining species which have as yet been detected (namely the *terebrans*, *obliteratus*, *debilis*, and *angustus*) the femora are unarmed. The *A. monilicornis*, however, presents a slight exception as regards its funiculus-joints, the last four of which are *almost* of equal length and breadth,—the first of them being scarcely at all elongated; but in every other respect it is typical.

23. Microxylobius (Chevrolat, *Trans. Ent. Soc. Lond.* i. 98. 1836).—A more careful examination of the many remarkable and dissimilar Cossonids, from St. Helena, which I have hitherto recorded (chiefly on account of their funiculus being 5-articulate) as *Microxylobii*, has convinced me that it will be better (indeed perhaps necessary) to treat them as exponents of two distinct genera,—or, if we include the comparatively gigantic "*M. cossonoides*" (which was enunciated by myself, as such, two years ago), of *three*. As thus restricted, the dark and almost unmetallic members of the group will be the *Microxylobii* proper,—in which moreover the surface, instead of being highly polished and perfectly bald, is subopake, more or less roughened, and with a *tendency* to be sparingly studded with a very minute pubescence (which, however, is sometimes barely traceable even beneath a high magnifying power). In fact, although distinct in the *M. vestitus*, and just appreciable in the *lacertosus* and *dimidiatus*, this pubescence may be said in the *Westwoodii* and *lucifugus* to be almost, if not indeed entirely, absent. These five species moreover, with the exception of the last, are the smallest of the assemblage, and have their rostra relatively a trifle broader and thicker (it being in some instances almost subtriangular), and the second articulation of their funiculus hardly at all longer than those which follow it. In the excessive brevity of their metasterna, *Microxylobius*, *Acanthomerus*, *Lamprochrus*, and *Amaurorrhinus* are nearly coincident; though perhaps it is in *Microxylobius* that it is more particularly shortened.

24. Microtribus (*nov. gen.*).—The very remarkable little Cossonid for which the present genus has been established is from the collection of Mr. Pascoe, and was captured by my nephew, Captain F. W. Hutton, in the Waikato district of North Island in New Zealand; and it is peculiarly interesting as adding another well-defined type to the escutellate section of the *Pentarthrides* in which the eyes are nevertheless fully developed. In its fusiform outline, dark-piceous hue, slightly shining surface, and rather shortened, subconcave metasternum, it is in entire accordance with most of the immediately-allied genera; but it is conspicuous for its rostrum being rather narrow, elongated, and parallel, for its eyes (although small) being prominent and less wide apart from each other than is usual, for its prothorax being oval, regularly rounded at the sides, and largely developed, and for the second joint of its exceedingly lax funiculus being very appreciably lengthened, and the third one of its feet much expanded and deeply bilobed. But one of its most significant features consists in the fact that, whilst the rest of its body is completely bald, the base of its elytra and the extreme hinder margin of its prothorax are studded, in unrubbed specimens, with a few very fine, elongated hairs, —thus feebly shadowing-forth what is so strongly expressed in the nearly-blind *Pentatemni* (of the Atlantic archipelagos), and still more so in *Halorhynchus* (from western Australia), the anomalous *Onycholips* (of the Canarian group), and the Madeiran genus *Lipommata*,— the last three of which are *totally* devoid of sight. Whether however it at all indicates (as I am rather inclined to suspect) a sand-infesting mode of life, as it clearly does in the groups to which allusion has just been made, I have no positive information. The exact position of *Microtribus*, amongst the various forms which up to the present time have been made known, appears to be between *Microxylobius*, from St. Helena, and *Mesoxenomorphus* from southern Africa.

It has given me great pleasure to name the type of this interesting genus after Captain Hutton, to whose indefatigable researches we are gradually becoming indebted for a more complete knowledge of the New Zealand fauna than has hitherto been brought to light.

25. Mesoxenomorphus (*nov. gen.*).—The three examples for the reception of which I have been compelled

to establish the present genus have been communicated by Mr. Janson, and are from British Caffraria in southern Africa. In their fusiform outline, piceous hue, shining, unpubescent surface, and obsolete scutellum, they are at first sight very similar to *Mesoxenus* (now merged into *Amaurorrhinus*) ; nevertheless the fact of their eyes (although minute) being present, instead of obsolete, throws them into a different, though proximate, section of the *Pentarthrides*. And, when closely inspected, they will be seen, further, to recede from *Amaurorrhinus*, not only in their relatively narrower body and more elongated prothorax and elytra, but likewise in their shorter, broader and more parallel rostrum, into which their very much more abbreviated antennæ are implanted further from the apex, in their legs (the front and hind pairs of which are a trifle more approximate at their respective bases) being also shorter, in their metasternum being appreciably more elongated, and (together with their first abdominal segment) less scooped-out, or concave, and in the third joint of their feet being more decidedly simple.

26. Heteropsis (*nov. gen.*).—I am indebted to Dr. Sharp for the remarkable little Cossonid for which the present genus is proposed, and which was captured at Auckland in New Zealand by Mr. Lawson,—after whom I have had much pleasure in naming the species. Its 5-jointed funiculus and obsolete eyes (which are minute, sunken, and very rudimentary) place it near to *Amaurorrhinus ;* nevertheless it differs from the latter, and the cognate forms, in having a developed scutellum ; whilst in its extremely short and broad rostrum (particularly of the male sex), which is a little contracted posteriorly and is divided from the head by a distinct frontal line, and its abbreviated, abruptly-clavate scape, it possesses features which are essentially its own. In other respects, *Heteropsis* is conspicuous for its small size, and its narrow, cylindrical, but somewhat depressed body, for its shining, picco-castaneous surface (which is very lightly sculptured anteriorly), and for its rather short legs and elongated metasternum.

27. Amaurorrhinus (Fairmaire, *Ann. de la Soc. Ent. de France*, 629. 1860).—Although the exceedingly short and imperfect diagnosis which M. Fairmaire has given of

this genus does not call attention to a single structural peculiarity beyond the fact that its funiculus is composed of but five joints, I have nevertheless no hesitation in identifying it with my *Mesoxenus* (from the Madeiran and Canarian archipelagos), seeing that his *specific* description of the type, namely the *A. Bonnairii* (= *A. narbonnensis*, Bris.), from Corsica and the south of France, seems to accord so well with an insect now before me, from Corfu, *which is unquestionably a Mesoxenus*, as to leave little doubt in my mind that it is even the actual species referred to by Fairmaire. This particular example has been communicated by Mr. Janson; and it is so closely allied to the *Mesoxenus Bewickianus*, from Madeira, that I had at first sight imagined it must be identical with it. A more critical inspection however has convinced me that the two are specifically distinct, though it is impossible to have the slightest hesitation in assigning them to at all events the same *group;* and I do not think, therefore, this being the case, that *Mesoxenus* should be kept apart from *Amaurorrhinus*. Nevertheless I ought perhaps to mention that Fairmaire makes no allusion whatever to the obsoleteness of its eyes, which is the most important feature in the insects now before me; and that he likewise speaks of the antennæ as "in medio rostri insertæ," whereas those organs are implanted considerably *before* the middle in the only three representatives of my genus *Mesoxenus* which I have hitherto examined. Still, the manifest looseness, and brevity, of his diagnosis is sufficient to account for these omissions; and it is my belief, as just stated, that the genera in question are identical.*

Regarding therefore the *Amaurorrhini* and *Mesoxeni* as coincident, I may add that the members of this genus have the bald, rufo-castaneous, and slightly shining surface of *Pentarthrum;* nevertheless their obsolete eyes and scutellum, and abbreviated metasternum, throw them into a totally different section of the present subfamily. They

* In size, colour, outline and sculpture, the species from Corfu (which I *believe* to be the *A. Bonnairii* of Fairmaire) almost exactly resembles the Madeiran *A. Bewickianus*,—from which it merely differs in its prothorax being a little less widened (or rounded-outwards) behind the middle, in its rostrum being just appreciably slenderer and less expanded in front of the antennæ (which are themselves not *quite* so thick), in its second funiculus-joint being perhaps a trifle more elongate (though not so much so as in the *A. Monizianus*), in its club being somewhat less developed, and in its metasternum and first abdominal segment being more convex (or hardly at all scooped-out, or concave).

are also more fusiform, or less parallel, insects than the *Pentarthra;* their prothorax is more rounded and convex; their elytra are less straightened, and more lightly sculptured; their rostrum is a little longer and less robust; and their antennæ (which are implanted a trifle nearer to the apex of the latter) have their scape slenderer and more curved. There is also a peculiarity about their undersides (which is likewise the case in most of the *Microxylobii* and *Acanthomeri*, as well as in *Lamprochrus*, and in many of the true *Cossonides*),—the first abdominal segment and the (very short) metasternum being deeply impressed (at any rate in the two Atlantic-island species) down the central region, causing them to be hollowed-out, or concave. Two out of the three *Amaurorrhini* with which I am acquainted (namely the *A. Monizianus* and *Bewickianus*) are found in the Madeiran archipelago, and one of them likewise at the Canaries, whilst the other occurs in the south of Europe; but the slight singularity in their modes of life, which appear to be much the same as those of *Pentarthrum* (as well as of *Hexarthrum*, of the true *Cossonides*), renders it probable that they will be found eventually to possess a more extended range.

28. Pseudomesoxenus (*nov. gen.*).—The little insect (hitherto unique) for the reception of which the present genus is established was taken in the island of St. Helena by Mr. Melliss; and it was recorded by myself, three years ago, as a blind, aberrant *Pentarthrum*, under the name of *P. subcæcum*.* It is evident however that it has a far closer affinity with *Amaurorrhinus*,—with which indeed its obsolete eyes and scutellum, and its convex, largely-developed prothorax, would tend to affiliate it. Still, an accurate examination of its structural details has convinced me that it cannot be treated as even an *Amaurorrhinus;* for not only is its metasternum very appreciably more elongated, and its rostrum thicker and *subtriangular*, but its elytra likewise are narrower and more parallel and cylindrical, and its limbs are shorter and less thickened,—the feet especially being slenderer and filiform, with their third joint almost unexpanded and simple. The underside moreover is convex, and has no trace of the concavity which gives so remarkable an appearance to

* *Vide* 'Ann. Nat. Hist.' iv. 410 (1869).

the first abdominal segment and greatly abbreviated metasternum of *Amaurorrhinus* and the allied groups.

29. Pentatemnus (Wollaston, *Trans. Ent. Soc. Lond.* 2nd ser. v. 385. 1861).—In its obsolete scutellum and eyes (the latter of which are very minute and indistinct, being composed of only about six small lenses), and its dark piceous hue, and the fact of its funiculus being 5-articulate, *Pentatemnus* agrees with *Amaurorrhinus;* but it differs from it essentially in most of its other details, as well as in its subfossorial mode of life. Thus, not only is its body (instead of being bald) sparingly studded with elongate silken hairs, but its elytra and under-surface are curiously and thickly asperated with obliquely-impinged punctures, its rostrum and antennæ (the former of which is more strictly parallel, and the latter are more medially inserted) are much shorter and thicker, its legs are considerably more incrassated, and its third tarsal joint is simple. Its tibial hooks too are *very* much more developed,—the four hinder ones being exceedingly powerful, and rather expanded, and compressed, at their base, causing the tibiæ to seem as though slightly rounded-outwards at their external angle. The *Pentatemni* are sand-infesting, and somewhat fossorial, in their habits (as indeed their pilose bodies, obsolete eyes, and strongly-developed legs and tibial hooks would partially imply), residing around the roots of shrubby plants which stud the arid tracts of loose, drifting sand in certain islands of the Canarian and Cape-Verde archipelagos,—where they often descend to a considerable depth beneath the surface. In such situations I have met with them in Lanzarote, Fuerteventura and Grand Canary of the former, and in São Vicente of the latter.

30. Halorhynchus (*nov. gen.*).—The insect for which the present genus has been proposed is from the collection of Mr. Pascoe, by whom it was received from Freemantle in Western Australia; and it is perhaps the most important of all the forms which he has communicated to me,—as establishing most completely the manifest relationship which exists (of which, despite the opinion of Lacordaire, I have never myself entertained the slightest doubt) between the *Pentarthrides* and that singular department of aberrant, fossorial Cossonids, to receive which I have established the subfamily *Onycholipides*. Indeed so much has it in common with *Onycholips* (with which it also

agrees in its total freedom from even the rudiments of eyes) that I had at first sight supposed it to be a member of that actual genus; nevertheless its 5-jointed funiculus, parallel outline and obsolete scutellum, in conjunction with its less completely approximated four anterior legs and the structure of its abdominal segments and tibiæ, show it to belong unmistakeably to that particular section of the *Pentarthrides* which contains *Pentatemnus*. In point of fact it is very intimately allied to the latter genus,—from which it nevertheless recedes in its eyes being altogether absent, in its tibiæ being armed at their inner angle (as in *Lipommata*) with a distinct spinule, and in the two hinder ones having their apical hook reduced in size and almost *spiniform*, in its four anterior tarsi being more narrow and linear, whilst the hinder pair are comparatively robust, and in its claws being so exceedingly minute as to be barely traceable even beneath the microscope. In its general outline and sculpture, as well as in its rather pallid hue, it is exactly intermediate between *Pentatemnus* and *Onycholips*,—a fact which is equally borne-out by its nearly rudimentary ungues, and the somewhat spiniform structure of its hinder tibial *unci*.

In its prothorax being appreciably narrower than the elytra, as well as in its inner tibial angle being produced into a very evident, robust spinule, and in its eyes being totally absent, *Haloryhnchus* embodies some of the most characteristic features, likewise, of *Lipommata* (in the true *Cossonides*),—thus bearing still further testimony to that strange and mysterious resemblance which seems, as it were, to bind together the *whole* of these immediate pilose, posteriorly-asperated, fossorial, sand-infesting forms, in the three subfamilies *Pentarthrides, Onycholipides,* and *Cossonides.*

31. Georrhynchus (Roelofs, *Ann. Soc. Belg.* x. 241. 1866; and xi. 78. 1867).—I am indebted to M. Roelofs, of Brussels, for the opportunity of examining his unique type of the very curious insect (captured near Montevideo, in South America) for the reception of which he established the present genus; and although I will not venture to record more than a desultory opinion concerning its affinities, which Lacordaire (*vide* Gen. vii. 348, *note*) and others have justly regarded as very obscure; yet, after a careful examination of its several parts, I cannot but think that it

is perhaps more correctly placed at no great distance from the equally anomalous group *Onycholips* than in any other situation with which I am at present acquainted. And if it can be shown that the subfamily *Onycholipides* is its true *status*, there can be but little doubt (despite the anomalousness of its structure) that it is a veritable member (although, like its immediate associates, an aberrant one) of the *Cossonidæ*;—for *Onycholips* is so intimately connected, on the one hand (through *Halorhynchus* and *Pentatemnus*), with the *Pentarthrides*, and on the other (by means of *Raymondionymus*, *Alaocyba*, and *Lipommata*) with the *Cossonides* proper, that there is scarcely room for question as to where, in any system of arrangement which professes to be a natural one, *it* should be stationed.

Although very differently modified, there is a remarkable degree of correspondence between *Georrhynchus* and *Onycholips*,—not merely in the exact parts selected for modification, but likewise, to a certain extent, even in the kind of their development; whilst in their subfossorial, sand-infesting modes of life they appear to possess another, and a very significant, point of union. Thus, in both cases, the number of the funiculus-joints is reduced to the very unusual one of *six*, and that of the tarsal ones to *four;* and both genera are almost equally conspicuous for their comparatively pale, hairy, convex, and slightly asperated bodies; for their greatly abbreviated antennæ, rostra, and metasterna; and for their tibiæ (although different in detail) being on a compressed and burrowing type, and moreover (which is of the utmost importance) *free from an apical hook*. In each instance, too, the scutellum is distinct, and (which is especially to be noted) the front coxæ are contiguous and the intermediate ones but barely separated. It is true that the eyes and claws, which are absent in *Onycholips*, are present in *Georrhynchus;* but that may indicate a mere generic difference, such as we see paralleled in other groups of the *Cossonidæ* which are universally admitted to be in juxta-position; and I think therefore that enough has been said to render it at least probable that the two genera in question are not very remote, as regards the several peculiarities of their structure, from each other. And if this fact can be but once established, it seems to me that we have then sufficient evidence to show (as may be gleaned from my observations

under *Onycholips* and the following groups) that the true position of *Georrhynchus* must be, of necessity, amongst the Cossonids.

32. Onycholips (Wollaston, *Trans. Ent. Soc. Lond.* v. 389. 1861).—It was not without some degree of hesitation in the first instance, that I decided on recognising the anomalous genus *Onycholips* as the type of a subfamily of the *Cossonidæ;* more especially since Lacordaire has expressed a doubt as to its true location, and hints that it may perhaps be necessary to establish a distinct family of the *Rhynchophora* to receive it,—along *perhaps* with *Georrhynchus* (the almost equally unintelligible Curculionid just alluded to, with apparently somewhat similar subfossorial habits, detected at Montevideo). Yet, despite its many eccentricities, some of which would seem to debar it from nearly every department of the weevils which has hitherto been defined (and which must remain, consequently, anomalies *wherever* the genus be placed), the more I study its various details (structural and external), and its fossorial mode of life, the more convinced am I, as at first, of its not very distant relationship with such blind members of the *Cossonidæ* as *Pentatemnus*, *Halorhynchus*, and *Lipommata* (particularly the former), and even more so perhaps with the equally blind *Raymondionymus* and *Alaocyba*,—all of which have either burrowing or sand-infesting habits, and slightly pilose bodies, and which show some kind of tendency for unusual tibial developments; the *last two*, moreover, having a 6-jointed funiculus, and quadriarticulate feet. Perhaps the most significant points however, which have been urged as tending to *remove* it from the *Cossonidæ* are embodied in the twofold fact that its first and second abdominal segments are not *completely* soldered, and that its intermediate coxæ are *almost* (like the anterior ones) contiguous; but, on the other hand, there are many undoubted Cossonids in which the first and second segments of the abdomen are not absolutely confluent, being (as in *Hexarthrum*, *Brachytemnus* and *Sphærocorynes*) separated from each other by a most conspicuous sutural line; whilst certain, also, of the sub-Hylastideous genera of the true *Cossonides* have (like *Hexarthrum*, *Stereocorynes*, *Tomolips*, *Brachytemnus*, *Stenoscelis*, and others) their intermediate legs (no less than their anterior ones, almost completely in contact, and I think therefore that neither of those characters will

suffice, of itself, to exclude a manifestly erratic form like *Onycholips* from being regarded as the type of a new department of the present family, the exponents of which are thus anomalously (though variously) modified.

Apart from its totally blind condition, its 6-jointed funiculus* and quadriarticulate feet, as well as from the fact of its anterior coxæ being entirely and its intermediate ones almost contiguous, and its apparent freedom from tarsal claws, *Onycholips* is at once remarkable for its rather globose and testaceous body, which is sparingly beset with exceedingly long silken pile, and the surface of which is somewhat *uneven* (being marked, or pitted, with large but shallow varioles, or irregular punctiform impressions) and slightly asperated, for its rostrum being short, broad, depressed, and subtriangular, for its scutellum being distinct, and for its antennæ and legs being greatly abbreviated. Indeed, the former are of a most curious structure, their scape being so reduced in length as to be absolutely concealed within the short and deep auriculiform scrobs; whilst its funiculus has the first *two* (!) articulations very largely and subequally incrassated, with the remaining four minute; and their club is extremely solid, and apically-pilose. And the latter, which are very short (especially as regards their femora), are still more extraordinary,—the two front tibiæ being produced at their outer angle into an exceedingly elongated, tectiform lobe (which represents the ordinary hook); whilst the four hinder ones are powerfully developed, and *spinulose* along their exterior edge, and compressed at each of their angles (inner and outer) into a small obtuse lobiform plate,—between which the feet are implanted. These latter are on a pattern which is quite without precedent in any Coleopterous insect with which I am acquainted: for while the anterior pair are abnormally shortened, narrow, filiform, and quadri-articulate (the fifth joint being apparently lost, and the fourth, or terminal, one being surmounted by a tuft of elongate pile as though to represent the ungues), the remaining ones have their basal joint abbreviated, the two following produced into a divaricating spiniform lobe at *each* of their angles, and the fourth, as I *believe*, minute and completely soldered to, or merged into, the fifth (which, like those which precede it, is apically-

* Lacordaire, in his 'Genera' (vide vii. 347), has inadvertently recorded *Onycholips* as possessing a 7-jointed funiculus.

divaricate),—the two together thus constituting a single joint, bifurcated at its tip. And from the analogy of the similar (though more enlarged) lobes at the angles of the joints which precede it, I conclude that these two terminal diverging processes do *not* represent the claws (which seem to be altogether absent), but rather the prolongations of the anterior angles of the ultimate joint.

In its habits *Onycholips* appears to be much the same as *Pentatemnus* and *Lipommata*, though more decidedly fossorial,—its spinulose posterior tibiæ being eminently on a burrowing pattern; and it is still more conspicuously beset (like so many sand-infesting insects), with remote, elongated hairs. Indeed, these latter are not confined to the body alone, both the scape and club of the antennæ being singularly pilose. I have captured it in the three eastern islands (Lanzarote, Fuerteventura, and Grand Canary) of the Canarian archipelago,—where it resides on, and beneath, the surface of the sandy hillocks, in the vicinity of the coast, which have accumulated gradually around the roots of the few shrubby plants which stud those arid spots.

33. Raymondionymus (= Raymondia, *pars*, Aubé, *Ann. de la Soc. Ent. de France*, 195. 1861).—The blind and anomalous genus *Raymondionymus* (or *Raymondia**), which appears to occur in Mediterranean latitudes, has somewhat the fusiform outline, rather elongated rostrum, and rufo-piceous hue of *Amaurorrhinus;* but its funiculus is composed of six articulations (instead of only five), its metasternum is shorter still, its tibiæ (which have no terminal hook) are compressed and triangularly dilated, and its feet are short, broad, and thick, furnished with long

* I regret that it should be absolutely necessary to change the name of this genus,—"*Raymondia*" having been preoccupied by M. Frauenfeld, for a group of the Diptera (*vide* Sitzungsb. d. Wien. Acad. xviii. 320), six years before it was employed by Aubé. In real fact, however, this is perhaps the less to be deplored, since I strongly suspect (judging from the diagnosis and figure) that Aubé's *R. fossor* is not actually congeneric with the *larger* species which have subsequently been associated with it,—but more properly with *Alaocyba*, as recently enunciated by Perris; and if this should be the case, it follows that the larger species, of which I would regard the *R. Marqueti* as the type, have not yet been separated generically from the smaller ones. Be this however as it may, the title "*Raymondia*" must of necessity be altered; and therefore, being unwilling to disconnect the group with the name of the eminent Coleopterist to whom it was originally dedicated, I have (rather than take the opposite alternative) proposed for it, instead, the perhaps not altogether euphonious one of *Raymondionymus*.

hairs beneath, and (instead of being on the ordinary pseudotetramerous type) strictly *four*-jointed. Its sculpture is very peculiar, the punctures (which are lighter towards the apex of the elytra) being exceedingly large and few in number (somewhat after the fashion of what obtains in *Onycholips*); its rostrum (as in *Alaocyba* and *Lipommata*) is appreciably, and gradually, narrowed in the middle; its surface, although appearing at first sight to be quite bald, will be seen beneath a high magnifying power to be studded (at any rate behind) with a few short bristles; and its legs are eminently fossorial, and greatly incrassated,—the triangularly expanded tibiæ being deeply scooped-out, or emarginate, towards their external angle, the excavation being more or less filled-up, or pectinated (at any rate in the posterior ones), with strong ciliæ, or bristles. Its antennæ (which are elongate, and almost terminal as regards their insertion) have the second joint of their funiculus perceptibly, though slightly, longer than those which follow it, and their club excessively large, abrupt, and distinctly annulated; and its tarsal claws are considerably developed. The concave, or longitudinally impressed, structure, also, of its first and second abdominal segments should be noticed; but this I think has been made too much of as a *peculiarity*,—since the same feature exists (more or less expressed) not only in *Alaocyba*, but likewise in several genera of the *Pentarthrides*, such as *Amaurorrhinus*, *Microxylobius*, *Acanthomerus*, and *Lamprochrus*; and we also find it in *Cotaster*, of the true *Cossonides*. In no genus, however, that I have yet examined, is the concavity so deep, and so well defined, as it is in *Raymondionymus*. In their modes of life the species of *Raymondionymus* seem to be in entire accordance with the members of the present curious subfamily,—their compressed, dilated, setulose, apically unarmed tibiæ indicating fossorial habits; whilst their total freedom from eyes would tend still further to imply a partially subterraneous propensity. And it is not surprising therefore that the few which have hitherto been brought to light (principally in the south of France) should have been met with in such situations as beneath stones deeply imbedded in the soil, within crevices of clay, and in the nests of ants. I should add that the particular species from which my diagnosis is compiled, and for a type of which I am indebted to John Gray, Esq., is the *R. Marqueti*, Aubé, from Narbonne.

34. Alaocyba (Perris, *in Abeille*, vii. 31. 1870).—I am indebted to Dr. Sharp for a type of the very rare genus *Alaocyba*,—namely the diminutive *A. carinulata*, which was taken by M. Raymond in Sardinia; and, after a very careful inspection of its details, I feel satisfied that it is truly distinct from *Raymondionymus* as represented by the *larger* species which have been referred to that group, though I am less convinced that it differs generically from the *smaller* ones which are equally cited as *Raymondiæ* (or *Raymondionymi*). Indeed one of them, the "*R. Delarouzeei*," which has been communicated by John Gray, Esq., appears to me to possess all the essential characters of *Alaocyba*, as contradistinguished from *Raymondionymus;* and I have no hesitation therefore in regarding it as pertaining to the former, rather than to the latter; and it is not unlikely that one or two of the others, when properly overhauled, may prove to be *Alaocybæ*. Be this however as it may (for I have had no opportunity of examining them), I consider the *carinulata* and *Delarouzeei* as at any rate belonging to *Alaocyba*, and the much larger, darker, and in many respects differently constructed, *Marqueti* as a *Raymondionymus* proper; and it is on this understanding that I have compiled my diagnoses of the two groups.

As thus defined, *Alaocyba* may be said to differ from *Raymondionymus* in the much smaller size, extremely pallid hue, and more depressed (and perhaps rather more setulose) bodies of the insects which compose it,—in which moreover the sculpture is less coarse (particularly in the *A. carinulata*, which must be regarded as the type), the prothorax is furnished with a more evident medial line, or keel, and the elytra are free from the cariniform structure (on either side) towards their apex. And, moreover (which is of greater importance still), the funiculus joints are more decidedly moniliform (the second one being as short and rounded as those which follow it), the legs are less thickened, and the tibiæ are less broadly dilated,—especially the front pair, which are *not* scooped-out like the other four towards their external apex, but merely a little truncated. The rostrum, too, is proportionately not quite so elongate; and in the *A. carinulata* the antennæ are implanted a trifle further from its apex. In their habits the *Alaocybæ* appear to be very similar to the *Raymondionymi*,—the structure of their compressed tibiæ, although a little less strongly pronounced, being eminently

fossorial. The *A. carinulata*, which (as just stated) is the type of the genus, was detected by M. Raymond in Sardinia.

35. Lipommata (Wollaston, *Cat. Mad. Col.* 100. 1857). —In the relative length and shape of its (nevertheless thicker) rostrum, which (instead of being quite parallel) is rather contracted in the middle, as well as in its total freedom from eyes, its sparingly pilose surface, obsolete scutellum, and subfossorial mode of life, *Lipommata* has manifestly *more* in common (despite its comparatively large, convex, *Phlœophagus*-like body) with *Raymondionymus* and *Alaocyba* of the preceding section (in which *nevertheless* the funiculus is 6-jointed, the feet quadriarticulate, and the tibial hook absent) than *Cotaster* has; and therefore I have given it the first place in the Cossonideous division of the family;—though at the same time it is true that in *Cotaster* the greatly abbreviated metasternum, uneven prothorax, and *primâ facie* aspect would indicate a considerable affinity with those two genera. In reality, however, I believe that *Lipommata* is still more closely connected with the (equally subfossorial) *Pentatemnus*, of the *Pentarthrides*,—which it greatly resembles, both in appearance and habits; but, not to mention other points of dissimilarity, that genus has the funiculus only 5- (instead of 7-) articulate, and the eyes (instead of being, as in *Lipommata*, altogether wanting) merely obsolete. At first sight, indeed, *Lipommata* might almost be regarded as a blind *Phlœophagus*,—so greatly does its ovate outline, obsolete scutellum, and convex, pilose surface, agree with certain members of that group: nevertheless its total freedom from eyes, its minutely asperated, basally-subemarginate elytra (the shoulders of which are, consequently, somewhat unusually porrect), and its rather differently-developed tibiæ, will of themselves at once separate it from the *Phlœophagi*. The single exponent of it which has hitherto been brought to light seems to possess the same sand-infesting propensities as *Pentatemnus* and *Onycholips;* it having been detected by myself in the Madeiran archipelago,—where it occurs about the roots of certain plants (often at a considerable depth beneath the surface), on the sandy slopes behind the sea-beach, in the island of Porto Santo. It is the only true member, so far as I am aware, of the subfamily *Cossonides*, in which the organs of sight are completely wanting.

36. Styphloderes (*nov. gen.*; Cotaster, Mots., *pars*).—In its exceedingly abbreviated metasternum, obsolete scutellum, and elongated antennæ (which are implanted considerably before the middle of the rostrum), as well as in its more or less pallid hue and subelliptical elytra, *Styphloderes* has much manifestly in common with *Raymondionymus* and *Alaocyba*, of the preceding subfamily; nevertheless it differs very essentially from them both, not only in its much larger size, and in its funiculus being 7- (instead of 6-) articulate, but likewise in its eyes being developed, and in the structure of its much longer legs,—the tibiæ of which (instead of being spinulose, compressed, fossorial, and apically unarmed) are elongate, narrow, and (as in all the *Cossonidæ* except the *Notiomimetides* and the *Onycholipides*) uncinated at their outer angle; whilst the feet, instead of being simple and *quadriarticulate*, are on the ordinary pseudotetramerous type,—the third joint being expanded and bilobed, and the fourth one minute and hidden. With these most important discrepancies, it seems to me quite impossible (despite the opinion of Lacordaire) to admit *Styphloderes* into the same actual section as those two genera; yet I have nevertheless acknowledged the points of agreement between the three (which consist mainly in their much-abbreviated metasternum and pallid hue) by placing them *almost* in juxta-position,—namely at the end and *nearly* at the beginning, respectively, of two distinct subfamilies. In its mode of life, no less than in its structural details, *Styphloderes* does *not* appear to be fossorial; though it is nevertheless stated by Motschoulsky (*vide* Guér. *Rev. de Zool.* 427. 1851) to have been found beneath marine *rejectamenta* on the sea-shore near Marseilles. It belongs essentially to Mediterranean latitudes, having been captured in the south of Europe and the north of Africa.

The only member of this genus with which I am acquainted (viz. the *exsculptus*, Boh., or *littoralis*, Mots.) has been hitherto associated with *Cotaster;* but if we are to regard the *Phlœophagus uncipes*, of Boheman, as the type of the *latter* (and it is expressly stated to be so), it seems absolutely necessary to propose an additional group to receive the former,—which differs essentially, in nearly every one of its details, from the *uncipes*. Thus, not only is it larger, and more pallid and depressed, but its rostrum is relatively very much longer, and rather narrower, its eyes are considerably smaller, its prothorax is uneven,

tricarinated, and constricted in front (instead of being convex and simple), its antennæ are more elongated and slender, inserted nearer to the apex of the rostrum, and with the (less compact) funiculus-joints (especially the second one) longer, its legs also (particularly as regards the tibiæ) are longer and thinner, and its feet have the third articulation more evidently expanded and bilobed, and the claws conspicuously more developed. The body moreover, instead of being coarsely, though sparingly, pubescent (with the pubescence developed on the elytra into elongate, erect setæ), is bald.*

37. Cotaster (Motschoulsky, *Guér. Rev. Zool.* 425. 1851).—In *primâ facie* aspect this is one of the most remarkable genera of the *Cossonidæ* with which I am acquainted; and, although European, it appears to be somewhat scarce in collections. I am however indebted to Mr. Gray and to Mr. E. W. Janson for the opportunity of examining several types—which, judging from labels which are appended to them, appear to have been captured by M. Hampe in Croatia. Before an accurate inspection, it has much the appearance of a small and rather narrow *Acalles*,—its convex, ovate body, and nearly opake, reddish-brown surface (which is sparingly clothed with decumbent fulvo-cinereous pile, which however is developed on the alternate interstices of the elytra into elongate erect bristles), giving it a character which is strongly suggestive of certain members of that group. Its rostrum is rather long and cylindrical; its prothorax (which is narrower than the elytra, at any rate than the widest portion of them) is suboval, closely punctured, and *even* (being scarcely at all constricted behind the apex); its elytra are ovate and punctate-striated, with the interstices convex and remotely studded (at any rate as regards the alternate ones) with the elongate setæ to which I have above alluded; its antennæ (which have their scape robust, slightly curved, and considerably thickened towards the apex, and their second funiculus-joint not at all lengthened) are inserted a little before the middle of the rostrum; its legs are a good deal incrassated; its claws are exceedingly

* I have had no opportunity of inspecting the *cuneipennis*, Aubé; but, judging from the diagnosis, my belief is that it will be found to be a true *Cotaster* (and therefore congeneric with the *uncipes*), and *not* referable to the group which I have established for the reception of the *exsculptus*.

minute; its metasternum is very short, and the first segment of its abdomen is likewise more abbreviated than is usually the case amongst the *Cossonidæ*.

[38. Lymantes (Schönherr, *Gen. et Spec. Curc.* iv. 1085. 1838).—The present genus, together with the two following, I have not been able to inspect; and consequently the few diagnostic characters which are given of it in my summary I cannot vouch for as being in precise accordance with the type. It seems to have been founded on a single species, from North America,—the *S. scrobicollis*, Bohm, —which is described as rather elongate and oblong, of either a black or brownish hue, somewhat variolose anteriorly and beneath, and with the elytra (which are not wider than the prothorax) deeply punctate-striate. Its metasternum is much abbreviated; its rostrum is robust, and separated by a deep stricture from the forehead; its eyes are small and depressed; its prothorax is elongate-quadrate; and its feet are short and filiform.]

[39. Aparoprion (Hampe, *Wien. Ent. Monatsch.* v. 68. 1861).—As just stated, this genus (although European) I have not been able to procure for examination; and consequently I cannot speak with any precision concerning the very few diagnostic features which I have extracted concerning it from Lacordaire. Indeed even the latter does not appear to have been acquainted with it except through the very short and imperfect description given by M. Hampe; and we may presume therefore that it is of great rarity in collections. It was established to receive a small insect (the *A. costatum*) from Transylvania, which is said to be of a brownish colour and finely pubescent,—with the prothorax subglobose and much narrower than the elytra (which latter are oval and convex), the head minute, the rostrum (into which the antennæ are inserted towards the apex) rather long and subcylindric, and the third tarsal joint bilobed.]

[40. Oodemas (Boheman, *Res. Eugen.* 138. 1859).—This genus, like the two preceding ones, I have not been able to inspect; and my short diagnosis is, consequently, a mere epitome of the one given by Lacordaire. It appears to have been founded by Boheman to receive a small insect taken near Honolulu, in the Sandwich Islands; which is described as regularly oval, glabrous, shining,

and of a greenish-brassy tint,—somewhat resembling, at first sight, according to Lacordaire, my Pentarthrideous *Acanthomerus conicollis*, of St. Helena. It appears to be very slightly sculptured anteriorly, but with the elytra longitudinally punctured (the punctures being large in front, but evanescent behind); its rostrum is said to be short and cylindrical, with the antennæ (which are slender) inserted at about the middle point; its anterior coxæ are but feebly apart, and the third joint of its feet is large and bilobed.]

41. Caulotrupis (Wollaston, *Ins. Mad.* 308. 1854). —In a paper which I published, in 1861, on the 'Atlantic Cossonides,' I expressed a doubt (*vide* Trans. Ent. Soc. Lond. v. 375) as to whether *Caulotrupis* should be regarded as more, in reality, than a slight geographical phasis of *Phlœophagus* peculiar to the Madeiran archipelago; and Lacordaire, taking advantage of this hesitation on my part, did not scruple to cite it (*Gen. des Col.* vii. 342) as absolutely identical with that group. Yet a more critical inspection of it than I had formerly been able to bestow has convinced me, as at first, that it will be better to treat it as generically distinct,—more especially since the presence, at the same time, of *Phlœophagus* proper in the Madeiran islands would seem to imply that it can scarcely be a *local* development, at all events, of that widely-spread type. Moreover the *Caulotrupides* play so important a part in the Rhynchophorous fauna of Madeira, where they attach themselves principally to the old and decaying stalks of various shrubby plants (though a few of them occur likewise beneath the bark of timber trees), that there is an additional advantage in keeping them separate; and it is with the greater satisfaction therefore that I am able to detect certain structural characters which I cannot but think, however small when taken separately into account, must fully warrant, when combined, my original conclusions with respect to them.

The *Caulotrupides* have a peculiar aspect, which, when once seen, can scarcely fail to distinguish them, even *primâ facie*, from the *Phlœophagi*. Thus they are more elliptical, or fusiform, in outline, *much* more lightly sculptured (particularly as regards their prothorax), and have, most of them, a greater or less tendency for a metallic lustre,—the *terebrans*, *Chevrolatii* and *conicollis* being completely brassy. Yet, in spite of this, their surface

(which for the most part is perfectly bald) is more or less *alutaceous*, being in some instances so conspicuously so as to appear nearly opake. Their prothoraces are more or less conical, and unmargined along the posterior edge, their scutella are generally quite untraceable, their prosternum is very distinctly carinulated behind the anterior coxæ, their legs are a little wider apart at the base than is the case in the true *Phlœophagi* (the hinder pair being especially remote), and the first joint of their feet is less evidently elongated.

42. Phlœophagus (Schönherr, *Gen. Curc.* iv. 1047. 1838).—The genus *Phlœophagus* has often been a good deal confused with *Rhyncolus*, certain species having been assigned by different authors to either group according as their rostra happened to be either slender or robust; and indeed if the gracility of that organ were their main distinguishing feature, it would perhaps be difficult to draw a line of positive demarcation between the two,—for there are undoubted members of both genera which have their rostrum narrow, and others which have it incrassated. Yet *on the average* the rostrum is certainly both longer and slenderer in *Phlœophagus* than it is in *Rhyncolus*. There are other characters, however, which would tend (according to the arrangement which seems to me to be most natural for the *Cossonides*) to place the groups in question far asunder; and perhaps none is more important than the presence or absence of a scutellum,—which in *Phlœophagus* is either altogether untraceable, or else is so minute and punctiform as to be with difficulty detected. The *Phlœophagi* also are more convex and ovate than the *Rhyncoli;* their prothorax is usually less developed, but more rounded at the sides; their metasternum is appreciably shorter; their anterior coxæ are more approximated (indeed the front ones are nearly contiguous); and their antennæ and legs are slenderer,—the former of which, likewise, as well as the tarsi, are generally more lengthened. The *Phlœophagi* moreover have the second joint of their funiculus and the basal one of their feet longer than is the case in *Rhyncolus*, and also the club of their antennæ more enlarged and annulated; and their third tarsal articulation is for the most part minutely bilobed, rather than simple;—though this character, last mentioned, is, in both genera, a variable one. The *Phlœophagi* are principally

either dark or piceous, in hue (more often the former); and some of them have a very faint brassy tinge; and, unlike the *Rhyncoli*, certain of the species (though by no means the majority of them) are sparingly pubescent. They appear to be widely distributed over the world; and although specifically few in number throughout Europe, they are rather unusually dominant in some of the islands of the Atlantic archipelagos.*

43. Pseudophlœophagus (*nov. gen.*).—This genus, which is established to receive the *Phlœophagus tenax* from Madeira and the Azores, combines in a remarkable degree the structural peculiarities of *Rhyncolus* and *Phlœophagus*,—agreeing with the former in its more parallel outline, less inflated body, and conspicuous (though rather small, transverse, and sub-perpendicular) scutellum; but with the latter in its abbreviated metasternum, and in its comparatively slender antennæ and tarsi, the first of which have (as in *Phlœophagus*) their second funiculus-joint appreciably longer than those which follow it, and their club enlarged and abrupt, whilst in the feet the basal articulation is considerably lengthened, and the third one minutely bilobed. In its greatly approximated anterior coxæ it is more on the *Phlœophagus* than the *Rhyncolus* pattern, and in its sericeous surface it is likewise more in accordance with (at any rate a certain section of) the former; but its coxæ are, if anything, still less separated than in even the *Phlœophagi* (the front ones being practically contiguous), whilst the minute *keel*, or lobe, of its mesosternum (between the intermediate coxæ) appears to me to be more developed than in either of those groups. Its type (the *P. tenax*) is a very common insect in the higher elevations of Madeira, where it occurs in great profusion in the rotten wood, and beneath the bark, of old trees,—more particularly those of the laurel tribe; and it has been met with also in the Azorean archipelago.

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* The European *P. œneopiceus* is a less typical member of the group than the various other species which I have examined; for not only does it recede in outline from the latter, but it has also manifest indications of a scutellum,—which, although not very easy to be detected, is certainly appreciable. Indeed, I am not quite sure that it would not be more natural to admit it (along with the *tenax*, from Madeira and the Azores) into the genus *Pseudophlœophagus*; nevertheless since the characters alluded to are not very pronounced ones, I will not disturb it in its usually-received position.

44. Thaumastophasis (*nov. gen.*).—It is for an insect which was captured at Gawler in Southern Australia, and which has been communicated by Mr. Pascoe, that the present genus is proposed; and so remarkable is it in many of its structural details that I could at first scarcely persuade myself that it was a member of the *Cossonidæ* at all. But since at least three other forms (outside the anomalous subfamily *Onycholipides*), namely *Aorus*, *Lipancylus*, and *Xenocnema*, have the tibial hook obsolete, and are nevertheless veritable Cossonids, *one* at any rate of its most significant features may be regarded as not altogether unparalleled even in the present department of the *Rhynchophora*. And certainly in *Thaumastophasis* the tibial uncus is strictly "obsolete" (and not completely absent),—for, when examined beneath a high magnifying power, its presence may readily be detected in the anterior pair, and I am not altogether sure that I cannot recognize traces of it in the four posterior ones likewise (though I will not be quite positive on this point); whilst the fact of its front coxæ being contiguous, and the intermediate ones but barely separated, is almost in exact accordance with what we observe in *Pseudophlœophagus*, and which is likewise unmistakeably *approached* in even *Phlœophagus* proper.

I need scarcely add that the affinities of *Thaumastophasis* are extremely difficult; but, nevertheless, having once decided that it is a veritable member of the present family, I am inclined to think that it will be better to place it near to *Pseudophlœophagus* than elsewhere,—with which (despite its many eccentricities) it agrees at all events in the shape and proportions of its (rather thick and linear) rostrum, and in its antennæ being long and slender, as well as in its body (although short) being parallel, sericeous and convex, its metasternum much abbreviated, its front coxæ contiguous (or practically so) and the intermediate pair but faintly apart, and in its feet (which however are considerably thicker) having their basal joint (like the second one of the funiculus) appreciably lengthened, and the third one (although *very* much more conspicuously so) expanded and bilobed.

In other particulars *Thaumastophasis* is remarkable for its perfectly enormous eyes (which however are not extremely prominent), for its slender and acuminated club, for its prothorax (which is small, and very much narrower than the elytra) being slightly uneven, or as it were

malleated, but nevertheless nearly unconstricted in front, for its legs being a good deal thickened, and for its body being of a piceous hue, with the exception of the elytra—which are conspicuously paler, or of a clear rufo-testaceous.

45. Himatium (*nov. gen.*).—In its narrow, parallel, cylindric, but not very convex, body—which is of a rufo-piceous hue, and sparingly studded with elongate, partially-erect, fulvescent hairs—the interesting little Cossonid for which the present genus is proposed, and which has been communicated by Mr. Fry as having been received from Malabar in southern India, will be easily recognized. Its surface is slightly shining, and (with the exception of the head, which is convex and almost free from punctation) coarsely and very densely sculptured; its rostrum is parallel, but nevertheless somewhat narrow and not very elongate; its eyes are depressed, and greatly separated from each other,—so much so indeed that they are barely visible when the insect is viewed from above; its antennæ (which are inserted just before the middle of the rostrum) have their scape rather abbreviated, straight, and robust, and their funiculus-joints (with the exception of the first one), short, subequal, and submoniliform; its prothorax is oval, and a good deal constricted in front; its metasternum is elongate; its coxæ (even the anterior pair) are wide apart, and the third articulation of its feet is nearly simple.

46. Pholidonotus (*nov. gen.*).—I am indebted to Mr. Pascoe for the loan of the somewhat obscure and insignificant little insect (captured by Mr. Wallace at Sarawak, in Borneo) to contain which the present genus is proposed; and, apart from its rather diminutive size, and piceous, opake, densely-sculptured surface, it is remarkable amongst the *Cossonidæ* for being one of the very few forms the surface of which is clothed (as in *Pholidoforus* from Japan) with scales,—some of them being coarse and mud-like, and others thick, robust, and setiform. In the inferior position of its depressed eyes (which are scarcely visible when the specimen is viewed from above), as well as in the structure of its rather long and narrow, but straightened, rostrum, and in the fact of its surface being piceous and (at any rate) *clothed*, I think there can be little doubt that it displays a certain degree of affinity with the Indian genus *Himatium;* but, in addition to its

squamose covering and smaller stature, its surface is more opake and closely sculptured, its rostrum is relatively more elongate and slender, its antennæ are more *medially* inserted, its scutellum is much less developed, and its legs are *setose* and proportionately thicker,—with the posterior coxæ wider apart, and the third tarsal joint more evidently bilobed.

47. Coptorhamphus (*nov. gen.*).—The present genus is founded on two species which have been communicated by Mr. Pascoe (obtained, I presume, by Mr. Wallace),—one of them from Sarawak in Borneo, and the other from Java. Its affinities are extremely difficult to determine; nevertheless I believe it to be a member of the *Cossonidæ*, and am inclined to think that the rather *inferior* position of its transverse and greatly depressed eyes, in conjunction with the fact that its rostrum is conspicuously divided from the forehead, and its surface clothed, or setulose (though in one of the representatives very sparingly so), will tend to place it at no great distance from *Himatium*—an Indian genus (in the collection of Mr. Fry) from Malabar. Yet its rostrum is considerably longer, slenderer, and more curved than that of *Himatium*, and also *very* much more separated from the head, the extreme base being far more constricted than what we observe in the groups around even *Catolethrus;* and its body, instead of being *pubescent*, is more or less scaly and setulose. *Coptorhamphus* moreover is remarkable for many peculiarities which are not indicated in any of the types with which I have nevertheless considered it the most natural to associate it. Thus, for instance, its funiculus (which has the second joint appreciably elongated) is gradually much increased in width, causing the club, although *large*, to be by no means abrupt; its front coxæ are nearly, if not indeed altogether, contiguous (even more so than in *Phlœophagus*); its femora are armed beneath with an acute tooth; its tibiæ are greatly curved, and are furnished towards their outer apex (more or less evidently), with a pectinated tuft of setæ; and its prothorax has a large, rounded, sharply-defined, and deep fovea just behind the middle of the disk. This last-mentioned character is so unusual, that I at first thought it must be the result of accident; but since it is conspicuous in both of the species, I cannot but regard it as a generic eccentricity.

48. Aphanommata (*nov. gen.*).—The insect which constitutes the type of the present genus was taken by myself, from out of rotten *Euphorbia*-stems, in the island of St. Antonio of the Cape Verde archipelago; and, to a certain extent, it combines in a remarkable degree the characters of *Phlœophagus* and *Rhyncolus*,—agreeing with the former in its comparatively slender limbs, and its more elongated first tarsal and second funiculus joints, as well as in the fact of its club being abrupt and its eyes depressed; but with the latter in its body being less convex and more parallel, its rostrum shorter and thicker, its scutellum conspicuous, and in the greater length both of its metasternum and (more cylindrical) prothorax. It possesses, however, many distinctive features of its own, in which it recedes from both of those genera,—such, for instance, as the inferior position of its small and sunken eyes (which are scarcely visible when the insect is viewed from above), its narrower and more parallel outline, and its greatly elongated metasternum; in all of which respects it approaches far nearer to *Himatium*. And it is further remarkable for its black, shining, and completely bald surface, for its triangular (though, at the same time, somewhat *elongate*-triangular) rostrum, for its transverse scutellum, and for the third articulation of its exceedingly long and slender feet being small and simple.

49. Brachyscapus (*nov. gen.*).—The affinities of this curious genus (which is founded on an insect from Natal which has been communicated by Mr. Fry) are somewhat obscure; for while it possesses the short and triangular rostrum, the rather approximated eyes, and the greatly abbreviated scape of certain of the sub-Hylastideous forms of the *Cossonides*, I nevertheless do not believe that it has in reality anything to do with those particular genera,—its completely suffused first and second abdominal segments, and the exact degree of separation of its coxæ, no less than the structure of its funiculus and elongate, conspicuously annulated club, its external contour and sculpture, and the shape and proportions of its prothorax (which is regularly oval, and distinctly narrower than the elytra), being all of them far more on the pattern which obtains amongst the *Phlœophagi*. And moreover, when we further consider that there is a considerable approach to its peculiar shape of rostrum in the preceding genus, *Aphanommata* (in which too the surface is shining, bald,

and of a deep black), and that a considerable reduction in the length of the scape is indicated (though to a less extent) in *Himatium*, I feel satisfied that the position in which I have placed it is a far more natural one than amongst the (more or less asperated, posteriorly-obtuse) types bordering on the *Hylastidæ*. In addition to the characteristics above mentioned, *Brachyscapus* has its scutellum a good deal enlarged, and its under-wings considerably developed.

50. Phlœophagosoma (Wollaston, *Trans. Ent. Soc. Lond.* 23. 1873).—The present genus is perhaps, on the whole, somewhat less satisfactorily defined than most of the others; and I think it is far from unlikely that it may be found eventually to include more than a single type of form; yet, being unwilling to multiply genera unnecessarily, I have thought it better to treat it as admitting a rather wider amount of structural variation than would seem to be indicated in the neighbouring groups; and we may possibly therefore regard it, in this particular respect, as somewhat analogous to *Cossonus*. It was established by myself, originally, to receive two slightly discordant species which had been collected by Mr. G. Lewis in the Japanese archipelago; and, if I am correct as regards the material now before me, I might define it as embracing a number of insects, sometimes a good deal differing from each other, which have a wide inter-tropical range, and which would seem, to at all events a certain extent, to represent the *Phlœophagi* and *Rhyncoli* of European latitudes. Indeed a considerable proportion of them have, I think, done duty for the former, and are consequently still cited as such in the various catalogues; but nevertheless they cannot, strictly speaking, be associated with the *Phlœophagi*, any more than they can with the *Rhyncoli*, —as interpreted by the structural features of the respective (and universally-acknowledged) *types* of those two groups. Thus, whatever be their discrepancies *inter se*, they recede essentially from *Phlœophagus* in having a largely developed scutellum, a comparatively elongate metasternum and prothorax, and in the second joint of their funiculus, and the basal one of their feet, being conspicuously more abbreviated. Moreover they are, on the average, much larger, less ovate, and less convex, their rostrum is proportionately more lengthened, and their four anterior coxæ are wider apart.

From *Rhyncolus*, on the other hand, (with which they agree *better* in their more separated coxæ, more elongate bodies, and developed scutellum), the members of *Phlœophagosoma* differ in their very much slenderer and more lengthened rostrum, in their less thickened and more medially implanted antennæ, which have a larger and more abrupt club, and in their less prominent eyes. And they are also larger than the *Rhyncoli*, and have their anterior coxæ (particularly however the intermediate pair) rather more remote from each other,—though these two characters are less strongly expressed than they were as compared with the corresponding ones of *Phlœophagus*.*

The species now before me, which I should regard as pertaining to *Phlœophagosoma*, are from Japan, New Zealand, the islands of the Malay archipelago, Malacca, Ceylon, Malabar, and southern Africa. The one from the last-mentioned of those regions (which has been communicated by Mr. Janson) has the name "*Phlœophagus ebeninus*, Schön." appended to it, but it scarcely seems to me to tally with the published diagnosis of that insect.

51. Pholidoforus (Wollaston, *Trans. Ent. Soc. Lond.* 18. 1873).—The present genus was proposed in order to receive a very singular Curculionid which appears to be common in the Japanese archipelago,—where it was detected near Nagasaki, in the island of Kushiu, by Mr. G. Lewis. It is at once remarkable amongst the *Cossonidæ* for the thick, cinereous, bristle-like scales with which it is densely studded,—a type of clothing with which we are very familiar in other departments of the *Rhynchophora*, but which is of the rarest occurrence in the Cossonids. In other respects it is conspicuous by its narrowish-fusiform outline (which is parallel in the middle, but much attenuated both before and behind), for its rather elongated antennæ and feet, for its eyes being exceedingly prominent, and for its third tarsal joint being a good deal expanded and bilobed.

52. Coprodema (Wollaston, *Trans. Ent. Soc. Lond.* 20. 1873).—Like the last genus, the present one was

* In the species of *Phlœophagosoma*, which I regard as the more typical ones, the rostrum is of equal breadth throughout; but in others it is either (as in the *P. curvirostris* from Japan) a little thickened at the base, or else (as in the *P. fusirostris* from New Guinea) slightly and gradually so behind the middle.

detected by Mr. G. Lewis in Japan, — namely, in the islands of Kushiu and Nipon; and it is remarkable from bearing a certain *primâ facie* resemblance to some of the smaller members of *Calandra;* whilst likewise its deeply sculptured, *besmeared* surface, rather elliptic outline, and costate elytra recall to mind some of the features of the *Dryophthorides:* nevertheless its 7-jointed funiculus and pseudotetramerous feet affiliate it at once with the true Cossonids. In other respects it is conspicuous for its rostrum being faintly attenuated towards the tip, for its eyes being exceedingly depressed, for its elytra being lopped-off straightly at their extreme apex, for its legs being rather short and robust, for its tibiæ (which have their hook powerfully developed) being armed with a small though robust spinule at their inner angle, and for its feet being very short and filiform,—with their third articulation not at all expanded or bilobed.

53. Exodema (Wollaston, *Trans. Ent. Soc. Lond.* 22. 1873).—The unique insect on which this genus was founded is, like *Coprodema* and *Pholidoforus,* from the Japanese archipelago,—where it was captured by Mr. G. Lewis. Its *primâ facie* aspect indeed, and opake, densely sculptured surface (which is sparingly besmeared with a sort of dirty-whitish, scaly, mud-like deposit), are so strongly suggestive of the former that it might well be regarded, at first sight, as a second member of that group; yet when closely inspected it differs so essentially in the structure of its feet, which are not only much longer but have their third joint (instead of small and simple) conspicuously widened and bilobed, that I cannot but think that it should be treated as the type of a nearly-allied but distinct genus. As regards its less important details, its antennæ are a trifle more elongate, and not *quite* so medially inserted (being implanted just perceptibly *before* the middle of its rather thicker rostrum), its eyes are a little more developed, its elytra are not at all truncated at their apex, and its metasternum and legs (especially the latter) are appreciably longer. Its femora also, at any rate the anterior pair, are proportionately not quite so clavate.

54. Melarhinus (*nov. gen.*).—The insect from which the characters for the present genus have been drawn out

is a native of Madagascar, and has been communicated by Mr. Pascoe. It is rather larger in size than the other members of the immediate department into which I have admitted it; nevertheless it agrees with them in its surface being dark, closely sculptured, and opake, and more or less besmeared with dirty, mud-like scales. In other respects it is remarkable for its rostrum being broad and depressed, channeled down the middle, and with the eyes exceedingly prominent; for its prothorax being appreciably narrower than the elytra, a good deal rounded at the sides, and very deeply constricted behind the apex; for its elytra (which, when viewed beneath the microscope, are most minutely and very sparingly pubescent) having their somewhat large punctures arranged in longitudinal rows, but scarcely in striæ; and for its antennæ and legs being much thickened, —the former moreover having their funiculus-joints very closely pressed together, or compact, and their club narrow and not at all abrupt.

55. Psilosomus (*nov. gen.*). — The present genus is remarkable amongst the *Cossonidæ* for the dark and *opake* (yet bald and densely punctured) surface of the somewhat *Calandra*-shaped insect for the reception of which it is proposed, and which has been communicated to me—by Mr. Janson as a native of Ceylon, and by Mr. G. Lewis, who captured it at Paulo Penang, in the Malay peninsula. And it is further distinguished by the comparative largeness of its prothorax, by its widely-sulcated elytra, and by its first abdominal segment (which is more conspicuously separated from the second one than is usual in this family) having in the male sex a deep rounded depression in the centre which is curiously filled up with fulvescent pile. Its rostrum is rather short, broad, and subparallel, though a little longer in the males than in the females, with the antennæ inserted at about the middle point; and its legs (which are robust and a good deal thickened, especially as regards their anterior femora) have their tarsi considerably developed, — with the ultimate joint elongate, and furnished with powerful claws.

I have little doubt that the affinities of *Psilosomus* are with such forms as *Coprodema* and *Exodema*, from Japan, —in which the elytra are costate, and the body (although very much smaller) is equally *opake* and densely sculptured. Nevertheless in both of those groups the surface, instead

of being bald, is more or less besmeared with mud-like scales.*

56. [Mimus (Fåhraeus, *Öfvers. Vet. Ak. Förh.* 283. 1871).—Not having been able to procure a type of the species (from Southern Africa) for which the present was established by Fåhraeus, I know nothing whatever concerning either its structure or its affinities,—the former, if we may judge from the diagnosis, being of the most commonplace description, and such as might apply equally to two-thirds of the entire *Cossonidæ;* whilst so far as the latter are concerned, not a syllable is recorded by Fåhraeus except that the group represents a new. "tribe" of the family. But why this should be the case it is impossible to conjecture, seeing that his description does not indicate so much as a single structural anomaly. Since he speaks however of the elytra as *sulcate* (no allusion being made to *punctured* striæ), and the body as black and closely sculptured, I am inclined (on the merest conjecture) to place the genus next to *Psilosomus* (from Ceylon and the Malayan peninsula),—in which the elytra are emphatically "sulcated," and the punctation is altogether dense.]

57. Amorphocerus (Schönherr, *Curc. Disp. Meth.* 329. 1826).—The South-African genus *Amorphocerus*, for types of which (the *A. rufipes*, Boh., and the *A. zamiæ*, Boh.) I am indebted to Mr. Pascoe and Mr. Janson, has many peculiarities of its own,—one of which, namely the construction of its tibiæ, would rather tend to remove it from the present family. These latter are decidedly abnormal for the *Cossonidæ*,—being not only unusually broad, triangular, and compressed, but with their apical hook (understanding that almost universal appendage as a *prolongation of the outer angle*) obsolete. It is true that a long and curved spine is conspicuous, but then it *does not proceed from the external angle* (which is merely surmounted with a very short and straight spinule); and also

* I think it is far from unlikely that the insect which forms the type of the genus *Psilosomus* is the one which was described by Mr. Walker (*Ann. Nat. Hist.* iv. 218, 1859) under the name of "*Cossonus? hebes;* but since his diagnosis is contained in ten words, and is unaccompanied by a single remark, it is impossible without an examination of the type itself to decide this point. But in any case the *generic* characters have not hitherto been defined; and I have thought it worth while therefore, even if the species should prove eventually to be the one alluded to by Mr. Walker, to place them on record.

that there is a *second* spine, from the *inner* angle of the tibia, of almost equal length, besides an additional smaller one between the elongated central one and the outer angle,—an anomalous structure (amongst the Cossonids), which causes the whole apex to be essentially *spinulose*. Yet there is a little indication of an irregularity of (at all events) *partially* the same character, in the (likewise African) genus *Aorus* and the South-American *Lipancylus*,—which I have consequently placed in juxta-position with *Amorphocerus*, and in which at any rate the terminal *uncus* appears (as it seems to me) to be obsolete.

In other respects *Amorphocerus* is remarkable for its rather depressed, broadish, parallel-oblong, posteriorly-obtuse body, dark hue, and very deeply (though not very densely) sculptured surface; for its rostrum being parallel and somewhat robust, though not very long; for its prothorax being largely developed, though not wider (at its broadest part) than the elytra, and but very little constricted in front; and for its antennæ, which are implanted considerably behind the middle of the rostrum) being short and thick,—with the funiculus (the first joint of which is much enlarged) exceedingly solid and compact, and the club small and not at all abrupt. Its scutellum is very conspicuous, and the third articulation of its feet is considerably expanded and bilobed.

58. Lipancylus (*nov. gen.*).—I am indebted to Mr. Janson for the loan of the very extraordinary insect for which the present genus is established, and which is South-American,—it having been taken, I presume by Mr. Bates, in the region of the Amazon. I have not the slightest doubt that its true affinities are with *Aorus* from western Africa,—with which it agrees in the most anomalous character (for the *Cossonidæ*) of its tibial hook being obsolete, as well as in its elongated, extremely slender and cylindrical (though less curved) rostrum, its narrow, parallel body (which, as in that genus, will be seen, when viewed beneath a high magnifying power, to be not altogether bald), in its unconstricted prothorax, its wide and greatly developed feet (the third joint of which is much expanded and bilobed), its minute claws, and in the fact of its long and thickened legs being more approximated at their base than is usual in the members of this family. Nevertheless, although approaching *Aorus* in so many important respects, *Lipancylus* has an abun-

dance of very remarkable features which are essentially its own, amongst which the proportions of its abdominal segments are by far the most significant,—the first and second of them being less elongated, while the third and fourth are considerably *more* so, than is customary amongst the Cossonids. The shape of its prothorax, likewise, is very peculiar,—it being somewhat *elongate-quadrate*, and rather wider (if anything) before than behind; its scutellum is rather large and squarish; its elytra are bi-arcuated in front, and separately rounded-off at their extreme apex; its antennæ are slender; and its tibiæ, especially the anterior ones, are armed at their inner angle with a distinct spine. The two last-mentioned characters, however, are almost equally indicated in *Aorus*.

59. Aorus (Schönherr, *Gen. et Spec. Curc.* iii. 253. 1836).—The genus *Aorus* was established by Schönherr to contain an insect which is found in western Africa, and for an opportunity of inspecting which I am indebted to Mr. Pascoe. It was placed by Schönherr amongst the *Cholides;* and although removed by Lacordaire into the *Cossonidæ*, it is by no means a very typical member (any more than *Amorphocerus* is) of the latter,—for its unusually approximated coxæ, narrow, *transverse* eyes, and, as it seems to me (for the example before me is a good deal mutilated), obsolete tibial hook, are all points of great significance which would certainly tend to remove it from the Cossonids. Still, its other features being on the Cossonideous type, I have admitted it into the family,—content to call attention to these particular characters (whatsoever they may be worth) of manifest divergence. In other respects, *Aorus* is remarkable for its exceedingly long, slender, and very arcuated rostrum (into which the antennæ are implanted a little before the middle), for its transverse eyes being altogether depressed, for the second joint of its funiculus being considerably elongated, for its tibiæ (the four anterior ones of which are armed with a spine at their inner angle) being sparingly asperated, or muricate, internally, for its third tarsal articulation being a good deal expanded and bilobed, and for its claws being unusually minute. In outline it is somewhat long and narrow,—with the elytra cylindrical and rather convex, and the prothorax (the widest part of which is, if anything, a little wider than the elytra) large, convex, regularly oval, and a good deal (and equally) rounded at the sides.

60. Homaloxenus (*nov. gen.*).—I am indebted to John Gray, Esq., for the very curious little insect, from the West Indian island of St. Domingo, to receive which the present genus is proposed; and it is so perfectly distinct from every other Cossonideous form with which I am acquainted that I had some hesitation at first in admitting it into the present family at all; nevertheless the unmistakeable structure of its abdominal segments, in conjunction with its tibial hook and other details, are sufficient I think to indicate its affinities. Its distinctly annulated club however, added to its elongate, slender, straightened, and longitudinally-strigose rostrum, into which the antennæ are implanted at the *apex*, are anything but in accordance with the usual modifications of the Cossonid type, being *primâ facie* somewhat suggestive of certain groups amongst even the *Erirhinides*,—an analogy which (however superficial) its *uni-dentate* femora would not tend to invalidate. But apart from these various peculiarities, *Homaloxenus* is remarkable for its rather broad and extremely depressed body — which is subopake, ferruginous, and sparingly clothed with a very minute decumbent subcinereous pubescence; for its entire prothoracic disk being very curiously flattened, or impressed; for its antennæ being long and slender, with the second joint of their funiculus (which is remarkably lax) conspicuously lengthened; and for its tibiæ (which have their hook very small) being barbed, or pencilled, at their apex with fulvescent hairs. Its scutellum is largely developed, its metasternum is somewhat short, and the third articulation of its feet is much expanded and bilobed.

61. Stenotis (Wollaston, *Ins. Mad.* 316. 1854).—The Madeiran genus *Stenotis* is founded on one of the most remarkable little Cossonids with which I am acquainted,—its extremely narrow, elongate outline, pallid hue, and subdepressed, delicately sericeous surface, added to the excessive length and slenderness of its rostrum, its elongated prothorax and metasternum, its thickened legs, and its unusually widened and deeply bilobed third tarsal joint, giving it a character essentially its own. Its subsericeous surface indeed, and general structure, show it to belong, unmistakeably, to the same department as *Mesites;* nevertheless I believe that its nearest known ally is the South-American genus *Eucoptus*, from Brazil and the region of the Amazon,—with which it has a good deal in

common, not only as regards its narrow, parallel, somewhat flattened, and very minutely sericated body, its elongated, slender rostrum, its greatly lengthened prothorax and metasternum (the former of which is very powerfully constricted in front), the conspicuously bilobed third joint of its feet, and the minuteness of its claws, but likewise in the smallness of its eyes, and in the curious tendency of its prothorax to be concave beneath.

In other respects *Stenotis* is remarkable for its narrow and porrected head, for its intermediate coxæ being not in the least degree more remote from each other than the anterior ones, and for its metasternum (which is remarkably convex) being furnished on either side in front with a minute transverse plait (or perhaps, rather, a cluster of plaits), which have somewhat the appearance of two roughened foveæ. Its antennæ (which are medial in the males, but post-medial in the females) are rather long and slender, with their second funiculus-joint appreciably lengthened; its sculpture is less coarse than in most of the immediately-allied groups; and its prothorax, as in the forms around *Mesites* and *Cossonus*, is widely channeled behind. Its type (the *S. acicula*, Woll.) is one of the rarest insects of the Madeiran archipelago, being found amongst the laurels at a high elevation,—on the *foliage* of which it appears to subsist.

62. Eucoptus (*nov. gen.*).—I am indebted to Mr. Pascoe for the loan of a female example, and to Mr. Fry for a male one, of the interesting little insect from which the characters for the present genus have been compiled. They are both of them South-American,—the former, judging from a label which is appended to it, having been captured (I presume by Mr. Bates) in the region of the Amazon, and the latter in Brazil (I believe near Rio Janeiro). In size and outward appearance *Eucoptus* has very much in common with such forms as *Pentarthrum* and *Stenotrupis;* but its funiculus is composed of seven, instead of only *five*, joints; and it is clear to me that its affinities, in reality, are with the types which cluster around *Mesites*,—particularly with the remarkable *Stenotis acicula* of Madeira. I have already called attention to the many characters which it possesses in common with that insect; and I need here, therefore, only state that *Eucoptus* is conspicuous for its narrow, parallel, depressed, and piceous body (the elytra however being of a paler, or more rufo-

castaneous, hue), which at first sight appears to be perfectly bald, but which when viewed beneath a high magnifying power will be seen to be very minutely and sparingly sericeous; for its rostrum (which is just appreciably widened towards the apex) being elongated and slender in the female sex; for its antennæ being implanted into the latter considerably behind the middle; for its rather porrected head and depressed eyes; for the sharpness, and fineness, of its sculpture; for its limbs (particularly the hinder legs) being somewhat short, its club rather narrow, and its third tarsal joint bilobed; for its prothorax and metasternum being a good deal lengthened; and for the first and second segments of its abdomen (the former of which, in the male sex, has, apparently, a large and rounded tubercle in the centre) being separated from each other by a *bi*-arcuated line. Its prothorax is free from a longitudinal groove; and its elytra have their striæ nearly simple, and the interstices somewhat transversely-reticulated.

63. Mesites (Schönherr, *Gen. et Spec. Curc.* iv. 1043. 1838).—A very careful examination of the various species from the Madeiran, Canarian, and Cape-Verde archipelagos, which I have hitherto referred to *Mesites*, has convinced me that they cannot properly be admitted into that group—as represented by its European members, of which the *M. pallidipennis* is the universally-acknowledged type; and therefore I have no choice but to restrict *Mesites* to the particular insects (namely the *M. pallidipennis* and *cunipes*, and the more recently enunciated *M. aquitanus*) which it was originally intended to embrace, —the *M. Tardii*, of western Europe, belonging manifestly to one of the Atlantic types.

As thus understood, *Mesites* may be said to differ from its more immediate allies (comprised in the two following genera) in its body being more parallel, cylindrical, and convex, as well as somewhat more shining; in its prothorax being more strictly *oblong* (instead of subtriangular); in its head being more incrassated, and with the eyes wider apart; in its male rostrum being shorter, and relatively more robust and linear,—it being less appreciably widened at the insertion of the antennæ; in the latter being much thicker and more abbreviated, particularly as regards their scape (which is likewise more outwardly curved); in its funiculus (the second joint of which

is *not* lengthened) being especially more incrassate, and its club comparatively small and narrow; in its metasternum being a trifle more elongate; and in its coxæ being a little less widely separated.

64. Rhopalomesites (*nov. gen.*).—The type of this genus I regard to be the *M. Tardii*, of western Europe,—an insect which ranges likewise to the Azores; and associated with it are several species from the Madeiran and Canarian archipelagos, two of which (namely the *maderensis*, and the Teneriffan and Gomeran *persimilis*), although with small distinctive features of their own, may possibly prove to be, in reality, but geographical modifications of the *Tardii*. The members of this group differ from *Mesites* proper, chiefly, in their male rostrum being considerably longer and slenderer, and proportionately a little more widened at the point where the antennæ are inserted; in the latter (which are implanted either *in* or *before* the middle, in that particular sex, instead of behind it) being very much thinner and more elongate, with the scape especially, and second funiculus-joint, more lengthened, and with the club very much larger and more abrupt; in their head being less incrassated and their eyes more approximate; in their legs being relatively a little longer, and rather more widely separated at the base; and in the third articulation of their feet being appreciably, though minutely, bilobed. They are also a trifle less cylindrical than the true *Mesites* (having a more evident *tendency* to be subfusiform), as also a little less convex, and not quite so shining; their prothorax is more triangular (or less *oblong*), and is more conspicuously channelled behind in the males and carinated in the females; and they are often sparingly clothed with an exceedingly delicate sericeous pubescence.

65. Odontomesites (*nov. gen.*).—Two of the (so-called) *Mesites* from the Canarian archipelago, and one from the Cape Verdes, I had long ago detached from the remainder,—making them to constitute a distinct section of the genus, in which the body is more fusiform and depressed, and the male femora are furnished beneath with an obtuse anguliform tooth; and it is quite clear, therefore, that if the *Tardii* and its immediate associates be

disunited from *Mesites* proper (as I cannot but think is absolutely necessary), these three species must likewise form a separate, though closely allied, group. In their smaller size, more fusiform outline, and general structure, they are of course nearer to *Rhopalomesites* than to *Mesites;* nevertheless they have a more decided tendency to posterior-attenuation than even the *smaller* members of the former, and (in addition to the subdentate femora to which I have just alluded) they possess a very peculiar feature in the fact of their male rostrum being fringed with elongate fulvescent hairs, on either side, from the point at which the antennæ are inserted to the apex. Added to which, their rostrum in the opposite sex is less *abruptly* thickened at its extreme base; their legs are proportionately a trifle more incrassated, and the intermediate coxæ wider apart; and the third joint of their feet is, as in *Mesites* proper, quite unexpanded and simple.

The species of *Odontomesites,* so far as I have hitherto observed, are attached exclusively to the rotten stems and branches of the various Euphorbias.

[66. Porthetes (Schönherr, *Gen. et Spec. Curc.* iv. 1041. 1838).—The genus *Porthetes* was founded to receive a Cossonid (the *P. zamiæ*, Bohem.) from southern Africa; and although I have not been able to procure an example for inspection, the published diagnosis appears to be sufficient to render its peculiarities intelligible. It is described as having much the *primâ facie* aspect of *Mesites,*—the type being a little shorter, but a trifle wider, than the European *Cossonus ferrugineus,* and of a blackish hue, with the elytra ferruginous. As in *Mesites* and its immediate allies, the rostrum (and to a certain extent, even the antennæ) vary according to the sex,—it being in the males thickened throughout its *basal half,* with the anterior portion narrow and cylindrical (the exact *reverse,* be it observed, of what is the case in the forms around *Mesites*), but in the females incrassated (as in those groups) at the extreme base only. Its antennæ (which are abbreviated) are shorter in the females than in the males, and are *basally*-inserted in the former sex but *medially* in the latter; and the scape is more powerfully clavate in the males than in the females. In its third tarsal joint, too, being somewhat expanded and bilobed *Porthetes* recedes from *Mesites* and *Odontomesites,* and is more on the *Rhopalomesites* pattern.]

67. Megalocorynus (*nov. gen.*).—It is for the *Cossonus depressus* and *conicirostris*, of Boheman, and a closely allied species (or perhaps only local variety) which has been communicated by Mr. Janson, all of them from Mexico, that the present genus is proposed; and, apart from every other character, they may be immediately distinguished from the *Cossoni*, not only by their largely-developed club, but by the sexual disparity in the structure of their rostrum and antennæ,—in both of which respects indeed, no less than in their more evenly and densely punctured prothorax, they are far nearer, in reality, to the groups around *Mesites* than to *Cossonus*.

Not to mention its parallel and extremely flattened body, *Megalocorynus* is at once remarkable for the enormous size and length of its capitulum—which is parallel-oblong, and densely clothed with a velvety pubescence; and its scape is peculiar from being somewhat *twisted* and subcompressed,—the inner edge (on account of the abrupt, but elongate, apical clavation) seeming to be almost scooped-out, or at any rate sinuated, posteriorly. Its rostrum, too, in the female sex, is of a very unusual shape,—being rather short and narrow, but nevertheless *flattened*, and gradually a little contracted towards the base; whilst in the males it is longer, and dilated anteriorly much after the fashion of the ordinary *Cossoni*. Its eyes (instead of being transverse) are nearly round; its prothorax is somewhat small and abbreviated, and a good deal rounded at the sides; its elytra (which are appreciably wider than the prothorax) are parallel and deeply sculptured, with the interstices almost costate; and its coxæ (even the front ones) are exceedingly remote. Its antennæ in the male sex are inserted a long way before, but in the females a long way behind, the middle of the rostrum; and they are likewise longer and more robust in the former case than in the latter, and have their scape more conspicuously clavate, and their capitulum, if anything, even still more developed.

68. Catolethrus (Schönherr, *Gen. et Spec. Curc.* iv. 1077. 1838).—The genus *Catolethrus* is composed of a few elongated (occasionally minute), narrow, somewhat shining, depressed *Cossonus*-like insects, of which the main distinguishing features seem to consist, so far at least as I am able to detect them, in their rostrum being (especially in the female sex) rather elongate and slender,

but nevertheless a little, and gradually, widened both towards its base and apex, and divided from the forehead by a very appreciable line; in their eyes being exceedingly depressed, *transverse*, and slightly approximated above; in their prothorax and metasternum being a good deal lengthened; in their scutellum being very conspicuous; in their elytra (which are just perceptibly broader than the prothorax) being deeply sulcated towards the apex—where they are separately, and minutely, rounded off; in their antennæ and legs (the former of which are inserted considerably behind the middle of the rostrum, and have the second funiculus-joint exceedingly abbreviated) being rather short and incrassated; and in their feet being much thickened, with the third articulation conspicuously dilated and bilobed. Their four anterior coxæ are about *equally* wide apart, and the hinder ones are but slightly more remote from each other.

I am indebted to Mr. Fry, and also to Mr. Janson, for the opportunity of inspecting types of the *C. longulus*, Bohm., from Mexico; and several other species are now in my possession (all of them South American) from the exceedingly rich collection of Mr. Fry. My own belief is, that the genus, as properly defined, is essentially an American one; for although it is true that three or four supposed representatives have been described from the islands of the Pacific, and elsewhere, I think it is nevertheless far from unlikely that these latter will be found, on a more critical examination, to pertain to some other group,—perhaps to *Catolethromorphus*, or even to the Pentarthrideous genus *Stenotrupis*.

69. Stenotribus (*nov. gen.*).—The type of this genus is a minute and narrow Brazilian Cossonid (communicated by Mr. Fry as having been received from Bahia), which is without doubt very closely allied to *Catolethrus*—for one of the smaller members of which it might well at first sight be mistaken. An accurate inspection, however, will show that it cannot in reality be associated with the *Catolethri*,—from which it differs in its antennæ being inserted into the *middle* (instead of considerably behind the middle) of its rostrum; in the latter being more parallel and cylindric (there being scarcely any tendency to either an anterior or a posterior thickening), and even still more conspicuously *divided* from the remarkably convex forehead; in its prothorax being *extremely* elon-

gated, less constricted in front, and perfectly *even* (there being no traces either of keel or depression); in *all* its coxæ being subequally apart (even the anterior ones being widely separated); and in its feet being much less incrassated, and with their third joint small and simple. Its elytra too are more decidedly parallel (or less fusiform) than in *Catolethrus;* its body is less depressed; its colour is nearly black; and its eyes are so extremely sunken as to be with difficulty detected.

[70. Proëces (Schönherr, *Gen. et Spec. Curc.* iv. 1080. 1838).—The present genus is one of six which I have not been able to inspect; but the two species to contain which it was established by Schönherr, and which are apparently peculiar to Madagascar, are stated by Lacordaire to be very similar at first sight to the *smaller* members of *Catolethrus*, and quite as narrow. Their rostrum however is said to be slenderer and more cylindrical; their antennæ are shorter and less thickened,—with the second funiculus-joint longer, and the club larger and more abrupt; and their legs are thinner, with the third articulation of the feet simple and not at all wider than those which precede it.]

71. Phacegaster (*nov. gen.*).—Although it does not tally precisely with the diagnosis, I have little doubt that the insect for which the present genus is proposed is the *Catolethrus nasalis* of Boheman, from Brazil. At any rate several examples are now before me (collected by Mr. Fry near Rio Janeiro, and in the province of Sta Catharina) which I feel satisfied are *congeneric*, and I believe also conspecific, with the *nasalis;* but it is nevertheless quite evident that they cannot be associated with the *Catolethri*. Not to mention their much larger size, they differ essentially from the latter in the form of their rostrum—which is *very* much broader, somewhat depressed above, and gradually (though not very considerably) widened from its base to its apex; and the antennæ are implanted into it nearer to the middle point. In other respects, *Phacegaster* is remarkable for a great peculiarity in its first and second abdominal segments—each of which are furnished with two rounded, *ocelli*-like spaces, filled up with coarse granules. The two on the basal segment are rather larger and more widely separated from each other than those on the second one, and are placed *before* the middle; whereas

those on the latter are not only more approximate, but are situated close behind the anterior margin. And there is also another feature which distinguishes this genus from every other with which I am acquainted, — namely the fact that its two hinder femora are fringed *beneath*, in the middle, with a narrow edging of short fulvescent pile; whilst the tibiæ (of the same pair of legs) are arcuated, and furnished on their *inner* side, towards the base, with a fascicle of elongated hairs. The legs are thicker than in *Catolethrus*, and the spine at the internal angle of the tibiæ (especially the four posterior ones) is larger and more robust.

72. Glœodema (*nov. gen.*).—The two beautiful insects, communicated by Mr. Pascoe, on which the present genus is founded (and which were captured by Mr. Wallace at Dorey and Saylee in New Guinea), are so remarkably alike in colour, outline, and sculpture that I cannot feel altogether certain that the very peculiar discrepancy which they display in the construction of their rostrum may not be merely *sexual;* and if this should prove to be the case, it follows that they must be treated eventually as members of a single species. With but a solitary example however of each of them to judge from, I feel scarcely warranted in assuming that a character so important and conspicuous is indicative only of the sex; and I have therefore regarded them as specifically distinct. The feature to which I allude is the shape and length of the rostrum,—which in one of the individuals now before me (and, I may add, very much the larger one of the two) is gradually widened towards the tip to a most marvellous extent, whilst in the other it is but slightly increased in breadth.

In other respects *Glœodema* is remarkable for the large size, fusiform outline, and somewhat convex, highly-polished, almost unsculptured surface of the insects of which it is composed,—which moreover are anomalously variegated with red and black (a very unusual combination amongst the *Cossonidæ*). Their head is elongate, and greatly exserted; their eyes are rounded, rather prominent, and wide apart; their prothorax is convex, and perfectly *even* (being quite free both from depressions and keel); and their limbs are long, but much incrassated,—the second funiculus-joint being remarkably shortened, the club narrow and acuminated, the four hinder tibiæ (as in *Phacegaster*, *Exonotus*, and others of the immediately-

allied forms) armed with a powerful and compressed spine at their inner angle, and the feet short and thick, with their third articulation expanded and deeply bilobed. Their prothorax, too, (as in the Madeiran *Stenotis*) appears to be more or less *concave* beneath; and their antennæ are implanted either about or a trifle before the middle of the rostrum.

73. Glœoxenus (*nov. gen.*).—It is for an insect from Madagascar (which has been communicated by John Gray, Esq.) that I have proposed the present genus; and its *primâ facie* aspect and fusiform outline are somewhat those of a gigantic, deep-black, highly-polished, and lightly-sculptured *Rhyncolus*. When more closely examined however it will be seen to belong, in reality, to a totally different group,—the robust and peculiarly-shaped spine at the inner angle of its four posterior tibiæ, in conjunction with its much abbreviated and thickened feet (the terminal joint of which is *extremely* short and conical) affiliating it, most unmistakeably, with the types around *Glœodema*, *Phacegaster*, *Exonotus*, and *Pseudocossonus*. Its rostrum is rather broad, depressed, and nearly parallel (though whether this is equally the case in both sexes I have no means of judging); its limbs are incrassated and exceedingly robust; the third articulation of its feet, although greatly thickened, is *simple;* and the spine at the inner apex of its front tibiæ is marvellously lengthened and developed,—in which latter respect it differs from every other Cossonideous form with which I am acquainted. As in most of these immediate genera, its club is narrow and somewhat acuminated; but its antennæ are inserted a little more evidently *before* the middle than is usual in the majority of its allies.

74. Exonotus (*nov. gen.*).—A genus the type of which (captured by Mr. Wallace in the islands of the Malayan archipelago) is well distinguished by its elongate, narrow, and parallel outline, rather large size, and convex, shining surface,—which is of a deep black, with the anterior portion of the elytra red. Its head and rostrum are broad, and of nearly equal width,—the latter (which seems to be linear in the females, but rather expanded anteriorly in the males) being somewhat short; its coxæ are all of them about equally separated; its legs are exceedingly thick and robust; its tibiæ (the front pair of which are

conspicuously biflexuose) have their apical cavities, for the reception of the tarsi, unusually large and open; and the latter (as in most of these immediately-allied forms) are remarkably short and incrassated, with the third joint deeply bilobed, and the ultimate one abbreviated and conical. The prothorax and elytra are very distinctly margined at their respective bases (the latter of them likewise at the apex); and, as in the neighbouring groups, the antennæ are thick, with the second funiculus-joint much reduced in length, and the club narrow and acuminated.

75. Pseudocossonus (Wollaston, *Trans. Ent. Soc. Lond.* 27. 1873). — The genus *Pseudocossonus* was founded by myself a short time ago to receive two insects which were captured by Mr. G. Lewis in Japan; and a third exponent is now before me, from the collection of Mr. Pascoe, which was obtained by Mr. Wallace at Dorey in New Guinea. There can be no doubt, I think, that its affinities are with such forms as *Catolethrus* and *Phacegaster*, from America; though still more so with *Exonotus*, from the Malayan archipelago, and the Indian *Catolethromorphus*—with which it agrees in its rostrum being more parallel, and *not* divided from the forehead by a basal line, as well as in the fact of its eyes being rounder, more prominent, and more widely separated, in its prothorax being perfectly *even* (or free alike from keel and depression), in its elytra being entire at their extreme apex, and in its four *posterior* coxæ (instead of the four anterior ones) being equidistant. As in most of the allied groups, the tibiæ of *Pseudocossonus* are furnished at their inner angle with a rather robust spinule; and the feet are abbreviated and thick, with the third joint bilobed, the terminal one very short and conical, and the claws exceedingly minute. Indeed this shortness of the tarsi is even still more expressed in *Pseudocossonus* than it is in any of the genera to which I have above alluded,—the basal and ultimate articulations being greatly reduced in length. Its body is shining, nearly parallel, and slightly depressed; and the sculpture anteriorly and underneath is somewhat fine. Although usually dark, its elytra (which do not appear to be margined at their extreme base, or at their apex) are occasionally rufo-castaneous, especially in front,—a peculiarity of coloration which is equally indicated in *Exonotus*.

76. Catolethromorphus (*nov. gen.*).—The present genus is founded on a single example from the East Indies (I have no note as to the exact region) which has been communicated by Mr. Fry; and we may perhaps look upon it as the Asiatic representative of the American group *Catolethrus*, to which in external aspect and structure it is a good deal allied. Yet it manifestly cannot be associated with the *Catolethri*, the most essential features of which (as regards rostrum, eyes, and antennæ) it does *not* possess. Thus, not only is its rostrum thicker and more strictly *parallel* (there being no indication of the slight, and gradual, *widening* towards the base and apex which is so characteristic of that group), and undivided by a frontal line from the head, but the latter is more exserted and largely developed, and has the eyes (instead of transverse, subapproximated, and depressed) rounded, comparatively wide apart, and slightly prominent. Its prothorax also is considerably shorter (being more truncated both before and behind), as well as more *even* and convex,—there being no trace of either a keel in front, or of a groove-like depression behind; its elytra are more strictly parallel, and entire (instead of separately and minutely rounded-off) at their apex; its antennæ (which are inserted in the *middle* of the rostrum, instead of considerably behind it) have their scape very much longer, and their club more abrupt and less acuminated; and its intermediate coxæ are more remote. This last-mentioned peculiarity has a certain importance amongst these immediate groups,—occasioning the four *posterior* legs (instead of, as in *Catolethrus*, the four anterior ones) to be equidistant at their base.

77. Brachychænus (*nov. gen.*).—In its rather narrow, parallel, and depressed body (which is of a palish, rufo-ferruginous hue), as well as in its linear and somewhat robust rostrum, its *even* prothorax, and the fact of its four *posterior* legs being subequally distant at their base (occasioned by the intermediate pair being rather wider apart than is usual), the little Cossonid from which the details for the present genus have been compiled, and which has been communicated by Mr. Pascoe as having been taken by Mr. Wallace at Sarawak in Borneo, has a good deal in common with *Catolethromorphus;* nevertheless its type is very much more minute than that of the latter, its rostrum is relatively not so elongated, its

antennæ (which are inserted rather *behind* the middle, instead of at the middle point) have their funiculus much shorter, as well as more robust and compact, with the second joint so greatly abbreviated that it is almost concealed from view, and its feet are less elongate, with the third articulation simple (instead of expanded and bilobed). Its capitulum, too, although not particularly abrupt, is very largely developed; and its eyes, although not prominent, are likewise large.

78. Stenomimus (*nov. gen.*).—The present group is founded on a very minute, narrow, and pallid little Brazilian Cossonid, several examples of which were captured by Mr. Fry near Rio Janeiro; and it may perhaps be looked upon as the more southern representative, in South America, of the preceding genus—which occurs from, at all events, the West Indian islands to the region of the Amazon. It is indeed very closely allied to *Micromimus*,—from which it nevertheless differs in its narrower, and relatively more parallel and elongated, outline; in its surface being less shining, and (at any rate so far as the elytra are concerned) minutely and sparingly sericeous; in its rostrum being longer, slenderer, and more strictly parallel; in its antennæ being *medial* as regards their insertion (instead of ante-medial); in its eyes being more rounded, and (instead of depressed) extremely prominent; in its prothorax being more triangular, and more deeply constricted in front; in the elytra being proportionately rather longer and more linear, but at the same time less acuminated at their extreme apex, where the pygidium is but barely covered; in its tibiæ being more evidently armed at their inner angle with a minute spinule; and in its tarsi being slenderer.

79. Micromimus (*nov. gen.*).—The two minute and rather closely allied species for which the present genus is proposed, are from the collection of Mr. Fry. One of them is West-Indian, having been taken in Trinidad; and the other was captured, apparently by Mr. Bates, in the region of the Amazon. They are remarkable for their pallid hue, and shining, deeply sculptured, somewhat depressed surfaces; for their rostrum being short, broad, and nearly parallel (it being but very slightly narrowed posteriorly); for their eyes being transverse and extremely large, but nevertheless completely sunken or

depressed; for their antennæ (which are implanted a little *before* the middle of the rostrum) having their scape greatly abbreviated, but rather unusually (and suddenly) clavate at its apex; for *all* their coxæ (even the front ones) being widely, and subequally, separated; and for the third joint of their feet being simple. Their rostrum is *not* divided from the forehead by a basal line as in *Catolethrus*; and their body, as in that genus, seems to be perfectly free from pubescence.

80. Glœotrogus (*nov. gen.*).—Although *primâ facie* on the *Cossonus* type, the curious insect which I have made to constitute the type of the present genus, and which has been communicated by Mr. Pascoe and Mr. Janson as having been captured by Mr. Wallace in the islands of Morty and Gilolo of the Malay archipelago, is one of the most anomalous members of the family with which I am acquainted,—being conspicuous not only for its highly-polished, almost unsculptured, and extremely flattened body (both above and below); but likewise for its greatly exserted, depressed, elongate-squarish head; its large but sunken eyes, which are a good deal approximated on the *under* side of the latter; for its exceedingly short and broad, but nevertheless *almost* parallel rostrum (which is merely a little contracted at the base); for its antennæ (which are inserted considerably behind the middle of the latter) having their scape elongate, outwardly curved and compressed, and greatly clavate anteriorly (where however it is obliquely lopped-off on the *inner* side, occasioning a tolerably well defined angle to be shaped-out at some distance from the tip), their funiculus much abbreviated, but with the joints increasing gradually, but very conspicuously, in width towards the club—which is exceedingly large, elongate-oval, and densely clothed (as with velvet); for its prothorax being straightly truncated (or even, if anything, perhaps, a little *scooped-out*), instead of trisinuated, behind, unconstricted in front, and perfectly *even;* and for its legs (which are short, especially the hinder ones) being very widely separated at their base, with the femora much clavate, and with the tarsi (the third joint of which is simple) rather slender and filiform.

81. Homalotrogus (*nov. gen.*).—The present genus, together with the one which precedes and the one which follows it, belong clearly to the same geographical type

(or, more strictly, perhaps, to the same *cluster* of types),—peculiar, apparently, to the islands of the Malay archipelago; and yet I scarcely think that they could be regarded as representing even distinct sections of a *single group*. At any rate, if I were to treat them now as such, I feel that the time would assuredly arrive when (as I have lately done with the forms which cluster around *Mesites*) they would be separated; and hence I have thought it desirable to forestall that event by detaching them at once.

With this preliminary remark, I may state that *Homalotrogus* differs from *Glœotrogus* in its type being a little more evidently (though at the same time *very lightly*) sculptured, and not so highly polished; in its head being much narrower, more convex, and *oval* (instead of flattened and subquadrate); in its eyes being consequently less widely separated; in its rostrum being much longer and more convex, and (instead of nearly parallel) with the hinder half comparatively slender and contracted, and with therefore the anterior one suddenly dilated (much as in *Cossonus*); in its prothorax (which is exceedingly *even*) being, if anything, squarer still, though more evidently constricted at its extreme apex; in the last three segments of its abdomen being margined behind with a row of large punctures; in its antennæ (which are inserted conspicuously *before*, instead of behind, the middle of its much longer rostrum) having their scape straighter and less outwardly curved, and only *obsoletely* truncate towards the inner apex (and therefore with but a very slight *tendency* for the anguliform projection which is so marked a feature in *Glœotrogus*), and having their second funiculus-joint appreciably less shortened; and in its legs being longer, with the femora (at any rate the posterior four) somewhat less clavate, and with the tibiæ less abbreviated. Judging from the labels which are appended to them, the types now before me (which are from the collection of Mr. Pascoe) were taken by Mr. Wallace in the islands of Coram and Batchian, of the Malay archipelago.

82. Isotrogus (*nov. gen.*).—This genus makes a nearer approach to the normal *Cossonus* pattern than either of the preceding two; yet it certainly is *not* identical with that group,—its extremely flattened body and unimpressed prothorax, and the peculiar construction of its scape (which is biflexuose, and shows a more distinct *tendency*

than even the last genus does, for the inner *anguliform* projection which is so conspicuous a feature in *Glœotrogus*), added to its abbreviated funiculus, its greatly enlarged capitulum, its elongate, oval, much exserted head, and the fact of its large but depressed eyes being considerably approximated on the underside, affiliating it unmistakeably with the small assemblage of types which appear to be characteristic of the islands of the Malayan archipelago.

As compared with *Homalotrogus*, the present genus is remarkable for the body being both larger and very much more deeply and coarsely sculptured; for its rostrum being more parallel (*i.e.* much less contracted behind, and therefore less expanded in front); for its head being a little thicker (or less narrowed); for its antennæ (which are more strictly *medial* as regards their insertion, instead of ante-medial) having their scape rather more evidently sinuated internally, and their second funiculus-joint not in the slightest degree lengthened; and for its prothorax being longer, or more oblong, and more decidedly trisinuated along its basal edge. The two species from which my generic diagnosis has been compiled were collected by Mr. Wallace in the island of Batchian.

83. Heterophasis. (*nov. gen.*).—The very beautiful insect, so remarkable for its rufescent prothorax, and the other, totally dark one, on which the present genus is established, are from the collection of Mr. Pascoe, and were captured by Mr. Wallace at Dorey in New Guinea. In the more ordinary construction of their rostrum and antennæ they make a still nearer approach to *Cossonus* than the members of any of the three preceding groups. Nevertheless I think they may fairly be separated from the true *Cossoni*,—from which they may be said to differ not only in their surface being at times more elegantly coloured (a fact of great significance in this department of the *Rhyncophora*), but likewise (which is equally important) in their more *fusiform*, or less parallel, outline, their extremely depressed surface (in which respect they agree with the three preceding genera), their rather more prominent eyes, and in their prothorax (which is alike free from a keel and a depression) being *almost* totally unsculptured—with the exception of being impressed down either side of its central region (and in the anterior constriction) with a row of punctures—which in *H. ruficollis* are extremely large, but almost obsolete in the *concolor*.

The first and second segments, also, of their abdomen are more completely fused into each other than is the case with any of the *Cossoni* which I have hitherto examined. Although rather more parallel in outline, I believe that the *Cossonus glabricollis*, Bohm., from southern Africa, will enter into this genus.

84. Cossonus (Clairville, *Ent. Helv.* i. 58. 1798).—The genus *Cossonus*, so widely distributed over the world, presents a great amount of structural instability as regards the degree of rounded-dilatation towards the apex of its rostrum and the coarseness of its sculpture; and I think it far from unlikely that a close comparison of its numerous representatives (as at present acknowledged) might enable us to separate them into two or three tolerably distinct groups; nevertheless as it is not my object in this memoir to monograph the closely-allied species of genera which are, on the whole, sufficiently well understood, I shall not attempt to do more than detach a few forms which are readily accessible to me, and concerning the claims of which for separation there can, I think, be no reasonable doubt. Amongst, however, its multitude of specific modifications, *Cossonus* is by no means unsatisfactorily defined, —the more or less narrow, parallel, depressed, deeply-sculptured, dark, and shining bodies of the insects of which it is composed, in conjunction with the form of their rostrum (which is always contracted behind, though often very *shortly* so, and *spatulate*, or expanded in front,—sometimes to an extraordinary, and at others to merely a slight, extent), its more or less longitudinally-impressed prothorax, rather widely separated anterior coxæ, and the unexpanded third joint of its feet, giving it a character which it is impossible to mistake. Its antennæ are inserted into the roundly-expanded apical portion of its rostrum; its eyes are transverse, oval, and not very widely separated across the forehead; and its surface is nearly always free from every trace of pubescence.

85. Hyponotus (*nov. gen.*).—I am indebted to Mr. Pascoe for the loan of the curious insect for which the present genus has been erected; and, judging from a label which is appended to it, it appears to have been captured by Mr. Wallace at Singapore, in the Malay peninsula. Its elongated, parallel outline, and dark, *opake*, closely sculptured surface, give it somewhat the appearance at

first sight of a minute *Tenebrio ;* and although it is manifestly much allied to *Cossonus,* I feel satisfied that it cannot be admitted amongst the numerous specific modifications of that extensive group. Thus, not only is its opake upper-surface sparingly besprinkled with very short and minute fulvescent setæ (a circumstance of great significance in this particular department of the present family), but its head is considerably broader and more developed, with the eyes (which are rounder and more prominent) consequently much more remotely separated ; its rostrum likewise is wider, shorter, and more parallel (it being merely a trifle narrowed, and gradually so, behind), its prothorax (which is *relatively* more abbreviated and more oval) is very coarsely, densely, and *uniformly* punctured all over, but unimpressed (although sub-carinulated) posteriorily, and its legs (the intermediate ones of which are extremely wide apart) have their femora (the four hinder ones of which are less clavate), their tibiæ (which are slightly flexuose), and their tarsi, each of them, proportionately, more elongated.

86. Borophlœus (*nov. gen.*).—The members of the present genus, which appear to be North-American (one of them having been communicated by Mr. Fry as coming from Mexico, and the other by Mr. Janson), are, I suspect, in most collections treated as small *Cossoni ;* nevertheless it seems to me to be scarcely possible to refer them to *Cossonus,* as rigidly defined,—from which they differ, not only in their rostrum being relatively shorter, broader, and nearly parallel (indeed completely so as regards one of the species), but also in their eyes being larger, rounder, more prominent, and more widely separated, in their prothorax being more *equally* and closely (though very coarsely) punctured, and unimpressed behind, in their metasternum being longer, their coxæ more approximate, and the third joint of their feet less decidedly simple (it being, although very minutely so, sub-bilobed).

87. Pachytrogus (*nov. gen.*).—The affinities of this genus, which is founded on an insect from Chili communicated by Mr. Janson, are extremely difficult ; for whilst the large size and robust general aspect of its type, in conjunction with its somewhat shortened scape, is at first sight entirely suggestive of *Stereoborus* and *Stereotribus,* its still thicker and broader rostrum (the tendency

of which is rather to be *subtriangular*, than posteriorly narrowed), and its depressed, less widely separated eyes, added to its very grossly and *equally* punctured prothorax (which is free from a constriction in front, and is nearly unsinuated at the base), and its convex body, are far more in accordance with what obtains in such sub-Hylastideous groups as *Brachytemnus*. On the whole, however, I think it will be more natural to retain it in the vicinity of the former,—and more especially since their is no appearance of the *excessive* reduction in the length of the scape which is so characteristic of the latter; nor yet of the obtusely-desilient apical region of the elytra, the subcontiguous anterior coxæ, and the slender feet, of those particular types. Its tibiæ are not so abbreviated as in *Stereoborus* and *Stereotribus*, and the front pair seem to be simple (or *un*-augmented internally; its scutellum is largely developed; and its rostrum, although unprovided with any anomalous tubercles and channel-like fissures, is nevertheless obsoletely gibbose, or uneven, on its upper surface.

88. Stereoborus (*nov. gen.*).—The insects which I would include under the present genus and the following one, although apparently (for the most part) undescribed, are some of them (on account, doubtless, of their rather large size, and dark, shining, deeply-sculptured surfaces) mixed-up in collections with the *Cossoni*—from which, however, they are, nevertheless, totally distinct. Indeed in the construction of their extremely robust and thickened legs they are very peculiar,—the femora (though especially the anterior ones) being greatly incrassated, whilst the tibiæ are unusually short, broad, and somewhat compressed, with the terminal hook powerfully developed; the front pair moreover being abnormally augmented on their inner edge (at some distance behind the internal angle) by a kind of lamelliform triangular plate (which however only becomes conspicuous when the insect is viewed obliquely). In other respects *Stereoborus* recedes from *Cossonus* in its head being considerably larger and broader; in its eyes (which are rounder and more prominent) being consequently much wider apart; in its rostrum (which is furnished with a narrow, anteriorly-evanescent channel in the centre, arising out of a minute frontal fovea) being conspicuously shorter, broader, and more parallel (in fact nearly *quadrate*); in its prothorax being longer, and somewhat more cylindrical; and in its coxæ

(though particularly the front ones) being more approximate. Its antennæ (which are implanted before the middle of the rostrum) are rather thick, with their scape slightly abbreviated, and their funiculus (the second joint of which is but *very* little longer than those which follow it) tolerably compact,—though not *so* compact as in *Stereotribus*.

The genus seems to be peculiar (so far as I am aware) to the islands of the Malayan archipelago,—the specimens now before me (from the collections of Mr. Fry and Mr. Pascoe) having been captured by Mr. Wallace at Dorey in New Guinea, and in the islands of Gilolo and Matabello.

89. Stereotribus (*nov. gen.*).—The members of the present group are very closely allied, in external aspect and general structure, to those of the preceding one,—from which they seem mainly to differ in their head being a little less widened, and their rostrum (which in the *S. incisus* and *tuberculifrons*, from Ceylon, is rather longer, and distinctly narrowed towards the base) being not only furnished behind with a very deep, short, wide, and somewhat gaping slit, or (as it were) gash (often accompanied by posterior frontal tubercles and inequalities), which takes the place of the narrow channel in *Stereoborus*, but likewise more or less bearded beneath, at the apex, with elongated hairs. Their eyes, too, are a little more prominent; their funiculus (the second joint of which is not at all longer than those which follow it) is more solid, or compact; and the additional lamelliform process which augments the inner edge of the two front tibiæ is armed at its base with a very conspicuous and robust spine (which is best seen when the insect is viewed obliquely and from *behind*). Like that genus, it is widely spread over the islands of the Malayan archipelago,—examples, obtained by Mr. Wallace in Batchian and Tondano, having been communicated to me by Mr. Pascoe; and it appears to range eastward, in however a slightly modified form (as witnessed by its somewhat longer and more posteriorly-narrowed rostrum, and its more developed club), to at all events Ceylon—from whence several individuals (representing my *S. incisus* and *tuberculifrons*) are now before me from the collection of Mr. Fry.

I have thought it desirable to append a subgeneric title

to the two species from Ceylon, in the event of its being found desirable ultimately to detach them from the others; though I scarcely imagine that their slight structural peculiarities of rostrum and club are of sufficient importance to indicate more than perhaps a geographical modification of a rather plastic type.

90. Stereomimetes (*nov. gen.*). — The rather large Cossonid which constitutes the type of the present genus, and which Mr. Pascoe has communicated as coming from Champion Bay in Western Australia, is manifestly akin to *Stereoborus* and *Stereotribus*, though at the same time approaching in the outline, colour, and sculpture of its oblong prothorax, as well as in the bipartite structure of the spine which arises from the inner angle of its four posterior tibiæ, the genus *Phaegaster*. However it entirely wants the short conical feet and the peculiarly formed rostrum of the latter, and of the groups which are allied to it; and its affinities appear to me to be clearly with *Stereotribus*,—with the *aberrant* members of which, from Ceylon, it very much agrees in (amongst other details) the shape of its robust, posteriorly-narrowed rostrum.

Despite however the undoubted relationship of this genus to *Stereotribus*, not only does the form of its almost *basally-unsinuated* prothorax and elytra and the structure of its inner tibial spur shew it to be unmistakeably distinct; but its antennæ (which are implanted further from the apex of the rostrum) are considerably thicker and differently constituted,—their scape being *extremely* robust, sub-tortuous, and powerfully clubbed, their funiculus remarkably broad, but with the joints nevertheless (instead of being compact) sharply and deeply separated from each other, and their capitulum small and narrow (as in the *Rhyncoli*). Its rostrum, which is a good deal rounded-outwards anteriorly, has a wide channel behind (which arises from a large frontal fovea); its eyes (as in the neighbouring groups) are very prominent; its prothorax is much less coarsely punctured, and its elytra are more strictly parallel, than is the case in *Stereotribus* and *Stereoborus;* its legs are longer, and not quite so broad,—both of which points are particularly observable as regards the tibiæ; and the front pair of the *latter* are less decidedly augmented internally by a lamelliform portion towards their base. Its colour, too, is less intensely black,—the anterior segments

and the underside being (at any rate in the example now before me) piceous, with the limbs of a still clearer tint.

91. Stereoderus (*nov. gen.*).—The present genus is manifestly allied to *Stereoborus* and *Stereotribus*,—though the rather smaller size to which its members would appear to descend, added to their more convex, cylindrical bodies, more lightly sculptured surface, and their more conical, unimpressed prothorax, gives them more the appearance at first sight of such forms as *Xestoderma* and *Xestosoma* (which are equally dark and highly-polished, and have a broad, abbreviated rostrum) in the vicinity of the *Rhyncoli*. Nevertheless, the peculiar construction of its rostrum, which is often barbed beneath with long fulvescent hairs, and has *three small clefts* in the upper anterior excavation which receives the labrum, as well as a curious *tendency* to be armed with one or more tubercles in the centre behind (all of which exist, more or less modified, in *Stereotribus*), is too significant to be misunderstood. And when we add to this the characteristic shortness of its scape, the excessive robustness of its limbs, and the internally dilated basal half of its anterior tibiæ (the superadded triangular portion arising from a robust spinule, situated at some distance behind the spiniform inner angle), each of which is conspicuously expressed in that genus, there can be no longer the slightest room for doubt as to its true affinities. Its eyes are large, very wide apart, and somewhat *anterior* in their position; and its third tarsal joint, as in most of these immediate groups, is simple.

Stereoderus is a genus which would seem to have a rather extended geographical range,—out of the three species now before me (all of which are from the collection of Mr. Pascoe), two having been captured by Mr. Wallace in the islands of the Malayan archipelago, whilst the other is from the Fiji islands in the Pacific. The latter, however, although I think it is impossible to regard it as generically distinct, shows a slight structural difference in the minute emargination at the extreme apex of its rostrum,—the large *medially-cleft* lobe, which *nearly* fills up the cavity in the other two species (causing the whole central piece to appear *trifid*) being so short, small, and *entire* as to be strictly *obsolete*. But so diminutive a character, even though structural, can scarcely be regarded as more than a trivial one.

92. Oxydema (*nov. gen.*).—The present genus is established to embrace three large and very closely allied species,—two of which (taken by Mr. Wallace in the islands of the Malayan archipelago) are from the collection of Mr. Pascoe, and the other (from Ceylon) in that of Mr. Janson. They are at once conspicuous for their elongate, narrow, and *fusiform* outline being a good deal attenuated both before and behind (particularly the latter), their dark hue, and their somewhat slender, considerably lengthened rostrum,—which however is not quite parallel, being appreciably broader in its anterior half (in front of the antennæ) than it is posteriorly. Their eyes are rounded and prominent, their prothorax is *even* and much constricted in front, their elytra are gradually narrowed from the base to the apex (where they have a tendency to be separately and minutely rounded-off), their anterior coxæ are very remote, and their antennæ and legs (the latter of which have the third tarsal joint bilobed) are rather long.

93. Notiosomus (*nov. gen.*).—Three insects now before me—two of which have been communicated by Mr. Pascoe as coming from western Australia, whilst the other (bearing the label "New Holland") is from the collection of Mr. Fry,—although, I think, specifically distinct, belong unquestionably to the same genus, and that genus is certainly not far removed from *Oxydema*. Nevertheless I feel satisfied that they cannot be actually associated with the members of the latter, which moreover appear to have a more tropical range,—occurring in (at any rate) the Malayan archipelago and Ceylon; and I would therefore regard them as pertaining to an Australian type, which perhaps may have other representatives in its own particular province.

Primâ facie, however, the present genus has much in common with *Oxydema*,—with which it agrees in its rather large size, and in the fact of its rostrum being a little reduced in width behind the insertion of the antennæ; nevertheless it recedes from the exponents of that group in the body being altogether (proportionately) less narrowed, and much less attenuated posteriorly, as well as less shining and sometimes less black; in its rostrum being rather shorter, and not quite so distinctly contracted along its basal half; in its antennæ (which are somewhat thinner) having the second funiculus-joint less decidedly

abbreviated, and the club less developed; in its prothorax being generally more conspicuously narrower than the elytra, less elongate, and not so deeply constricted in front; in its scutellum being less transverse; in its metasternum being appreciably shorter; and in its feet being slenderer, with their third articulation usually smaller and narrower, and much more minutely bilobed. Its eyes, as in *Oxydema*, are extremely prominent, and its sculpture is rather coarse. The first of the three species, however, which are described in this paper (—namely the *O. major*), I may add, is not quite so typical of the group as the other two; nevertheless I do not think it can be looked upon as an *Oxydema*.

94. Aphanocorynes (*nov. gen.*)—In its rather large size, elongate, narrow, subfusiform outline, and deep-black hue the insect for which the present genus is founded, and which has been communicated by Mr. Pascoe (as having been captured by Dr. Masters at King George's Sound, in southern Australia), has somewhat the appearance at first sight of *Oxydema*—which occurs in Ceylon and the islands of the Malayan archipelago. Nevertheless it differs in its body being more depressed, and much more finely and closely sculptured, in its elytra being less attenuated posteriorly, and without any tendency to be separately rounded-off at their extreme apex, in its rostrum being a litle shorter and entirely *parallel*, and in its club being *very* much less developed. Indeed this latter is even smaller, narrower, and more acuminated than in even the typical *Rhyncoli*. Its prothorax too (which however, as in that genus, is deeply constricted at the apex) is not altogether *even*,—it being widely, but lightly, impressed in the centre behind; and its third tarsal joint is more evidently dilated and bilobed, and the terminal one is shorter, than is the case in *Oxydema*.

95. Orthotemnus (*nov. gen.*).—As in the two preceding genera, the type of the present group (which appears to be extensively spread over the islands of the Malayan archipelago) is a comparatively large and elongate insect, and of a dark hue; but it recedes in many important particulars from the neighbouring forms,—particularly however in its flattened surface, and elongate, triangular prothorax, which is very straightly truncated at the base (where it is of the same width as the elytra —

which are perfectly parallel, and are likewise very straightly truncated in front), and in its rostrum being rather long and robust, but of equal breadth throughout, in its eyes being very largely developed, in its elytra being separately recurved at their extreme apex, in its third tarsal joint being small and almost simple, and in its four anterior coxæ being very widely and subequally distant, whilst the posterior ones are, if anything, even *less* remote than the others,—a character which is most unusual amongst the Cossonids. The examples now before me (all of which seem to pertain to a single species) are from the collection of Mr. Pascoe, and were captured by Mr. Wallace at Dorey in New Guinea, as well as in Batchian, Makian, and Ceram.

96. Macrorhyncolus (Wollaston, *Trans. Ent. Soc. Lond.* 33. 1873).—The present genus, which I established a short time ago to receive a Cossonid which was obtained by Mr. G. Lewis in Japan, and of which a second species (from Ceylon) is now before me, communicated by Mr. Fry, is somewhat intermediate between the preceding groups and *Rhyncolus;* nevertheless I believe that it is, in reality, far more nearly allied to the former than to the latter. From *Rhyncolus* it differs, principally, in the body being relatively longer, narrower, and more parallel,—it being less convex, and without any tendency to be ovate (or expanded behind the middle); and its surface is more shining, and of an intenser black. Its rostrum is more strictly parallel,—being indeed, if anything, rather *contracted*, perhaps, than otherwise, towards the base (instead of, as in the *Rhyncoli*, somewhat thickened); its eyes are larger and more prominent; its prothorax and metasternum are more elongated; its club (although small) is both less narrowed and less acuminate; and its four anterior coxæ are a little more remote.

97. Heterarthrus (Wollaston, *Trans. Ent. Soc. Lond.* 29. 1873).—It was for two very closely related species which were captured by Mr. G. Lewis in Japan that I lately established the genus *Heterarthrus;* and a third is now before me, from the collections of Mr. Pascoe and Mr. Janson, from the same region,—it having been taken near Nagasaki, in the island of Kushiu. They may be known from the members of the neighbouring groups by their convex and *fusiform* bodies having the

elytra either altogether pale, or else (which would seem to be the normal condition) ornamented with suffused blackish markings. The head is narrow, with the eyes consequently less wide apart than what is the case in most of these immediately-allied types; and the rostrum is somewhat short and robust, though by no means very broad, and gently, but appreciably, dilated towards the tip—which is, itself, rather *straightly* truncate. The prothorax (which is finely and densely punctulated) is a good deal narrowed, and much constricted, in front; and the antennæ and legs (the former of which have their club shortish, and tolerably abrupt) are *comparatively* slender. The intermediate coxæ are remotely separated (occasioning the four hinder ones to be equidistant); the femora are unusually thin towards their base; and the tarsi (which have the terminal joint ordinary and clavate in the males, but subconical in the females) are very conspicuously lengthened.

98. Conarthrus (*nov. gen.*).—In the conical but *not* abbreviated last joint of its feet (which may, or may not, be indicated in both sexes,—for I have only a single example of each species from which to judge), no less than in the densely punctured anterior portion of its surface, and its short, unacuminated club, the present genus (which is founded on two species which were captured by Mr. Wallace in the islands of the Malayan archipelago, and a third, from Cochin China, which has been communicated by Mr. Fry) is more related, I think, to *Heterarthrus* and *Eutornus* than it is to the groups around *Exonotus* and *Phacegaster*—with the latter of which, nevertheless, in the proportions of its broad head and rostrum, as well as its large size and parallel, cylindric body, it almost entirely agrees. It may be known from the forms amongst which it seems to me most natural to associate it by its elongate, linear outline, black hue, sloping (or *sub-perpendicular*) scutellum (—a character, however, which is less distinctly indicated in the *C. vicinus* from Cochin China), its exceedingly flexuose anterior tibiæ, and its wide head and rostrum,—the former of which is also much exserted, whilst the latter varies in the two Malayan examples now before (but which I nevertheless *believe* are both of them females), being in one instance perfectly parallel, and in the other not only a little longer but appreciably dilated anteriorly. It is possible however that I may be mistaken in regarding these two Malayan

individuals as pertaining to the same sex, in which case the outline of the rostrum may perhaps be only sexual. But, be this as it may, I suspect that they are specifically distinct from each other.

99. Eutornus (*nov. gen.*).—The two insects which I have described as members of the present genus are from Ceylon and the Malayan archipelago,—the one from the former having been communicated by Mr. Janson (to whom I have dedicated the species), whilst the other is from the collection of Mr. Pascoe and was captured by Mr. Wallace.* Indeed, judging from the many examples now before me, the Malayan representative would appear to be widely spread over those particular islands, and also to be remarkably constant, or free from variation,—the types of it which I have examined having been obtained in New Guinea, Morty, Tondano, Gilolo, and Makian.

The characters of the genus are very similar to those of *Conarthrus*, and yet I feel satisfied that the two groups are essentially distinct,—*Eutornus* receding from the latter not only in the less parallel (or more fusiform) outline, and more lightly sculptured surface, of the insects for which it is established, and in the peculiarity of their colour, which (instead of a uniform black) is *rufo-ferruginous*, with the anterior and posterior portions more or less suffused, or obscured; but likewise in their rostrum being apparently always linear, in their prothorax being less straightly truncated (or more subsinuated) at its base, in their scutellum *not* being tilted (or sub-perpendicular), in their elytra being (as in *Heterarthrus*) obscurely, and minutely, rounded-off, separately, at the extreme apex, and in the last joint of their feet being less conspicuously conical. Their first and second abdominal segments, too, are more convex,—having scarcely any tendency to be longitudinally hollowed-out, or concave.

100. Coptus (*nov. gen.*).—The two curious and closely-allied little species on which the present genus is established have been communicated by Mr. Pascoe, and were taken by Mr. Wallace in the islands of New Guinea and Sula, of the Malayan archipelago. Apart from their rather small size, parallel outline, subdepressed surface, and their rufo-piceous, or piceo-ferruginous hue, they may be

* The *E. dubius*, from New Zealand, is less typical, and may perhaps be found eventually to pertain to a new but cognate genus.

known readily from the neighbouring forms by their eyes being enormously developed and very prominent, by their antennæ (which have the second funiculus-joint much abbreviated, and the club abrupt) being inserted towards the *base* of their rostrum, and by the latter being exceedingly broad (indeed scarcely narrower than the head), but nevertheless parallel, much arcuated, and straightly truncate, or lopped-off, in front. The third articulation of their feet is simple, and their coxæ (even the anterior pair) are widely and subequally separated.

101. Pachyops (*nov. gen.*).—Two examples of the species for which the present genus has been established (which have been communicated by Mr. Pascoe), were obtained by Mr. Wallace at Sarawak in Borneo. They may be known from the allied forms by their narrow, parallel, cylindric, and rather deeply, closely sculptured bodies; by their broad, thick, convex, greatly exserted head; by their short and wide rostrum; by their long, subconical prothorax, which is but lightly constricted in front; by their elongate scape, and roundish, abrupt, compressed, largely-developed club; and by their coxæ being somewhat less separated than is the case in the neighbouring groups,—the anterior pair being scarcely, if at all, more remote than in the *Rhyncoli*.

102. Pentamimus (*nov. gen.*).—Several examples of a Cossonid which I have received from Mr. Pascoe as coming from King George's Sound in southern Australia, and a closely allied species (likewise Australian) which has been communicated by Mr. Fry, have so much the *primâ facie* aspect of large *Rhyncoli* that they might be almost supposed to pertain to that genus. Yet their 5-jointed funiculus, and rounder and more developed club, show them to be altogether distinct; though their affinities are so unmistakeably with the Rhyncoliform groups that it would be absurd to suppose (on account of the structure of their funiculus) that they have anything whatever to do with the subfamily *Pentarthrides*. In other respects *Pentamimus* is remarkable for its shining, deeply sculptured and cylindrical body; for its thickened head, and short, broad (though parallel) rostrum; for its somewhat incrassated antennæ (which are implanted a little behind the middle of the latter) having their scape a good deal lengthened and backwardly curved; and for its legs being rather long and thick, with the third tarsal joint simple.

103. Tetracoptus (*nov. gen.*).—The present genus, the type of which (although very much smaller, and more lightly punctured) at first sight closely resembles *Pentamimus*, is remarkable for its *quadriarticulate* funiculus,—it being the only instance amongst the entire *Cossonidæ*, outside the subfamily *Dryophthorides*, so far at least as I have hitherto observed, in which that organ is composed of but four joints; yet so unmistakeably is it a member, as regards the whole of its other details, of the Rhyncoliform groups that it would be as absurd to remove it on account of the structure of its funiculus into the *Dryophthorides* (with which in everything else it totally disagrees) as it would be to regard *Pentamimus* and *Tomolips* as Pentarthrids, or to include *Hexarthrum* amongst the *Onycholipides*. In point of fact there can be no question, despite its 4-jointed funiculus, about its affinities; and it is a significant fact that the only exponents of the subfamily *Cossonides* in which the funiculus is made-up (so far as I am aware) of *less than seven* articulations should pertain to genera which appear, in a natural system of arrangement, to be at no great distance from each other,—namely *Hexarthrum* (in which the funiculus is composed of six joints), *Tomolips* and *Pentamimus* (in which there are but five), and *Tetracoptus* (where the number is reduced to four).

Apart however from the primary peculiarity to which I have just called attention, *Tetracoptus* may be known by its cylindrical body and very lightly sculptured surface; by its exceedingly short and broad, but nevertheless parallel, rostrum (which has a wide, but shallow, channel in front); by its elongate, large, subconical prothorax (which is about the same width posteriorly as the elytra, and is more constricted in front than in *Pentamimus*); by the smallness of its scutellum; and by its abrupt, considerably-developed club. Its anterior coxæ are tolerably wide apart, and the four hinder ones are about equidistant; its legs (especially as regards the tibiæ) are somewhat short, its third tarsal joint is simple, and its claws are minute.

The single example of this genus from which my diagnosis is compiled has been communicated by Mr. Pascoe, and was captured by Mr. Wallace at Dorey in New Guinea.

104. Xestoderma (*nov. gen.*).—The present genus and the following one are a good deal allied to each other,

and appear to be extensively spread over the Malayan archipelago—whence two species of each, now before me (which have been communicated by Mr. Pascoe), were obtained by Mr. Wallace in the islands of Ceram, Morty, Batchian, and Ternate. They belong to a type quite distinct from any of the preceding ones,—their very lightly sculptured, shining, deep-back, cylindrical bodies, in conjunction with their short, broad, and thick rostra (which are but very little narrower than the head), their excurved scape, their abrupt, compressed club, and the fact of their first and second abdominal segments being divided by a very conspicuous line, giving them a character which it is impossible to mistake. In *Xestoderma* the rostrum is free from an anterior channel, the capitulum is but moderately developed, the intermediate coxæ are very remotely separated, and the third tarsal joint is quite simple. The scutellum is either small and somewhat rounded, or else smaller still, short and transverse.

105. Xestosoma (*nov. gen.*).—As already implied, the members of this genus have much the appearance of those of the preceding one; nevertheless the body is *relatively* a little broader and thicker; and moreover, whilst one of the species is highly polished, the other is almost opake. The antennæ too have their scape longer and somewhat more robust, and their club dark and sericeous, and considerably more developed,—it being very large and rounded in the *X. grandicollis*, but oval in the *subopacus*. The scutellum is very minute, short, and transverse (rather more so perhaps than in even the *Xestoderma atra*); the intermediate coxæ are rather less widely separated; and the third tarsal joint is *not* quite simple,—it being appreciably (at any rate in the anterior pair), though very minutely, sub-bilobed, or cordate.

106. Lissopsis (*nov. gen.*).—Unfortunately the only example which is accessible to me in drawing out the characters of the present genus has lost its antennæ; yet its other details are so well defined, and I am so convinced that the insect cannot be referred to any other group enunciated in this paper, that I have no hesitation in treating it as a distinct type of the sub-Hylastideous Cossonids with exceedingly abbreviated rostra. It is at once remarkable for its rather wide, short, and parallel-oblong outline (which is somewhat obtuse both before and behind); for its ros-

trum, although thus abbreviated, being nevertheless subparallel, rather than triangular, as well as slightly concave in the middle, and most curiously *polished* (and *unsculptured*) *at the base;* for its eyes being, as in *Sphærocorynes*, extremely prominent; for its prothorax being large and convex, about equally rounded at the sides, and of the same breadth at its widest part as the elytra; for the latter being shortly-cylindric, very deeply and coarsely sulcate-punctate, and obtusely rounded and minutely *asperated* posteriorly; for its tibiæ (at any rate the front pair) being subflexuose; and for its coxæ, even the anterior ones, being widely separated. The specimen which has furnished the diagnosis is from the collection of Mr. Pascoe, and was captured by Mr. Wallace at Saylee on the north-west coast of New Guinea.

107. Sphærocorynes (Wollaston, *Trans. Ent. Soc. Lond.* 38. 1873).—*Sphærocorynes* is one of the many genera the discovery of which is due to the researches of Mr. G. Lewis in Japan; and it is conspicuous for its very short and channelled rostrum being nevertheless (as in *Lissopsis*) parallel, rather than triangular, and for its antennæ (which are thickened and considerably developed) having their scape elongate, their funiculus abbreviated, and their club large, rounded, and abrupt. Its eyes are extremely prominent; its body (which is subcylindrical, and comparatively lightly and delicately, though rather closely, sculptured) is convex, just appreciably sericeous on the elytra, and rather more evidently so beneath; and its legs are subequally separated at their base,—the anterior pair being a little more, and the hinder pair a little less, remote than is usual amongst the Cossonids. Its tibiæ (the front ones of which are slightly flexuose) are rather long; and its tarsi have their first joint considerably lengthened, and the third one, although scarcely widened, very minutely (but evidently) bilobed.

108. Xenotrupis (*nov. gen.*).—The affinities of this genus are somewhat difficult,—its longer and less thickened rostrum, which is gradually narrowed posteriorly, its less incrassated head, and *fusiform* (instead of parallel) outline tending to remove it from these immediate groups; yet at the same time it has so much in common with them in its convex, shining, deep-black, lightly sculptured surface, its abrupt and compressed club, its largely de-

veloped prothorax and elongate feet, as also in the fact of its first and second abdominal segments being divided from each other by a conspicuous line, that I think it will be more natural to place it in the present position than elsewhere. Its coxæ are all of them very widely separated, though each successive pair is more remote than the one which precedes it; its eyes are exceedingly large and prominent; and its prothorax is slightly concave on the underside. The single species on which the genus is established is from the Malayan archipelago,—it having been captured by Mr. Wallace in the island of Batchian, as well as at Dorey in New Guinea.

109. Pachystylus (*nov. gen.*).—Two examples of the remarkable species for which the present genus is established have been communicated by Mr. Fry as having been received from Chili; and their position in a natural system of arrangement is not altogether very apparent,—though, on the whole, I believe that it will be best to place them at no great distance from *Rhyncolus*. Nevertheless I must admit that in the minuteness of their scutellum they stand perfectly alone amongst those immediate groups, and make a far nearer approach to *Phlœophagus* and *Caulotrupis*. Still, the scutellum is not quite *obsolete;* and the other details of their structure (particularly as regards their incrassated limbs, and their short first tarsal and second funiculus joints) are so much more in accordance with the corresponding ones of the *Rhyncoli* that I cannot persuade myself to remove the genus into the *Phlœophagus* neighbourhood; though, at the same time, I am far from thinking that the situation which I have selected for it is quite satisfactory. Be the position, however, of *Pachystylus* what it may, it is, as a genus, very distinct from everything else with which I am acquainted,—the smallness of its scutellum and its extremely prominent eyes (which in the male sex are abruptly terminated posteriorly, but gradually sloped-off in front), in conjunction with its somewhat lengthened rostrum (as compared with that of the *Rhyncoli*), which is very much broader in the males than in the females, and its elongate, thickened scape (which, on account of its robustness *throughout*, is but little clavated towards the apex), giving it a character which is essentially its own. Although not wider than the elytra, its prothorax (which is almost free from an anterior constriction) is very largely developed, and elongate; and there

is a peculiarity about its surface,—which is subopake throughout the anterior half, whilst the elytra are slightly shining, and just appreciably even subænescent (calling faintly to mind certain of the Madeiran *Caulotrupides*). The underside, too, is rather singularly modified according to the sex,—the metasternum in the females being a little concave posteriorly, and furnished in the middle with a minute, isolated keel, abruptly terminated in front; whilst in the opposite sex the keel is absent, but the concavity is larger (extending through the first segment of the abdomen).

110. Xenomimetes (Wollaston, *Trans. Ent. Soc. Lond.* 35. 1873).—*Xenomimetes* is a genus which was detected by Mr. G. Lewis in Japan,—where indeed the only representative of it which I have hitherto seen would appear to be locally abundant, and (unless I am much mistaken) of pine-infesting habits. In this latter respect it consequently resembles *Eremotes* and *Brachytemnus*, with the former of which it has several points (though perhaps only superficial ones) in common. It may easily be recognized by its type being elongate, narrow, and parallel, as well as somewhat opake and very densely sculptured,—it being also (when viewed beneath a high magnifying power) minutely pubescent, and asperated, towards the hinder apex (where the elytra are separately, and conspicuously, rounded-off, causing them to appear almost divaricate). The rostrum is rather peculiar in its construction,—being very short, but nevertheless quite parallel, and *suddenly* much narrower than the head; the eyes are extremely prominent; the club (unlike that of *Eremotes* and of the *Rhyncoli*) is rounded and abrupt, the antennæ being *comparatively* slender; the legs (particularly as regards the tarsi) are a good deal elongated; the tibiæ (more especially however the anterior pair) are elongated and subflexuose; and the coxæ are but slightly separated,—the front ones indeed being not more so than in *Rhyncolus*, whilst the two hinder pairs (which are about equidistant) are by no means very remote.

111. Eremotes (Wollaston, *Trans. Ent. Soc. Lond.* 2nd Ser. v. 364. 1861).*—The genus *Eremotes*, which may be

* When compiling my 'Coleopt. Atlantidum,' in 1865, I changed the name of this genus, from *Eremotes*, into *Syntomocerus*,—feeling that the title was so near to *Eretmotes*, of De Marseul, that there might be a risk

regarded as an offshoot of *Rhyncolus*, was established by myself in 1861 to receive the "*Hylastes crassicornis*" of Brullé,—a *Hylastes*-shaped Cossonid which infests the pine-trees of the Canarian archipelago; and a recent examination of some of the discordant species of (so-called) *Rhyncolus* has convinced me that the European *R. strangulatus* is an undoubted member of the same group. Indeed a single example is now before me (described in the after-part of this paper) which is unquestionably a *third* representative of *Eremotes*, but I have unfortunately no information concerning its precise habitat. However I *believe* it to be European,—it having been purchased by John Gray, Esq. (in whose collection it now is), some years ago, from M. Tarnier of Dijon, as the "*R. chloropus*"—with which, I need hardly add, it has scarcely anything in common.

Judging therefore from the three members which have hitherto been brought to light, *Eremotes* may be said to differ from *Rhyncolus* in its species being not only larger, more cylindrical, and more coarsely sculptured, but likewise in their prothorax being longer, more cylindrical, and more constricted in front, in its rostrum being shorter, broader and thicker, in its eyes being more prominent, and (above all) in the structure of its antennæ,—which are extremely incrassated, their funiculus especially being thick and robust, and with the second joint so reduced in length as to be *almost hidden within the apex of the greatly enlarged basal one*. In all probability *Eremotes* will be found to be exclusively of pine-infesting habits; and it is far from impossible that the species which I have enunciated in the latter portion of this memoir, under the name of *E. gravidicornis*, may prove to have come from the region of the Pyrenees.

112. Rhyncolus (Germar, *Ins. Spec. Nov.* 307. 1824). —Like *Phlœophagus* and *Cossonus*, the genus *Rhyncolus* has had many forms assigned to it, by various authors, which will be seen, when carefully examined, to be not strictly on the pattern of its acknowledged *type*—namely, the European *R. ater*, Linn. (or *chloropus*, Fab.). Thus, after removing *Eremotes* (for the reception of the *R. strangulatus*, Perris), *Stereocorynes* (for the *truncorum*, Germ.),

of possible confusion. Since however the Munich Catalogue, and others, have not accepted this alteration on my part, which would appear to be deemed by them to have been unnecessary, I have thought it better to revert to the original nomenclature.

Hexarthrum (for the *culinaris*, Germ., and the *submuricatus*, Bohm.), and *Brachytemnus* (for the *porcatus*, Müll.), there still remains a residuum, even amongst its smaller members, which future monographers will in all probability further divide; yet, having reduced its heterogeneous material thus far, and since I am not professedly in this paper examining every described species (some of which would not be readily accessible), I am content to leave the group partially pruned, and to treat it as represented by those particular exponents which I have been able to inspect, and a list of which will be found in my general summary at the close of the present memoir. As thus curtailed, therefore, I believe that *Rhyncolus* will be found to possess by no means so universal a range as the different Catalogues would lead us to conclude,—none of its members being, apparently, of a large stature. At the same time, however, I would not wish to imply that its area of distribution is unnecessarily restricted; but merely to call attention to the fact that a vast proportion of the species which figure as *Rhyncoli* in various papers and local enumerations have in reality nothing in common with the universally-acknowledged generic type.

For the characters which separate this genus from *Phlœophagus*, with which it has occasionally been confounded, the observations which I have given under the latter will suffice.

113. Caulophilus (Wollaston, *Ins. Mad.* 315. 1854). —The insect on which this genus was established in 1854, and which I captured twenty-six years ago in the island of Madeira, is still unique; and in its general appearance it somewhat resembles at first sight a small state of the European *Rhyncolus cylindrirostris*, Oliv. (= *lignarius*, Mshm.). Nevertheless when closely inspected it will be seen to be structurally dissimilar in many respects; and I doubt indeed if it can be actually associated with the *Rhyncoli* at all. Thus, in addition to its rostrum being obsoletely divided from the head by a very obscure frontal line, or depression, its antennæ are by no means on the true *Rhyncolus* pattern,—their club being considerably larger and thicker, but nevertheless more acute at the apex, their funiculus less incrassated (the basal joint being very conspicuously smaller, and the terminal ones narrower and more transverse), and their scape more clavate. Its eyes also are *very* much more developed, as well as

more *approximate* (or less widely separated); its scutellum is a trifle larger; and its elytra are somewhat more cylindric or parallel. As in the majority of the *Rhyncoli*, its third tarsal articulation is simple.

114. Xenocnema (*nov. gen.*).—It is for an insect from New Zealand, which has been communicated by Dr. Sharp, and which was captured by Mr. Lawson in Auckland, that I am compelled to establish this genus; and there is perhaps no member of the *Cossonidæ* which I have hitherto examined which is so difficult as regards its affinities,—for although (as I cannot but think) an undoubted member of the present family, in the construction of its tibiæ it is nevertheless completely *Hylastideous*. Moreover the first and second segments of its abdomen are less elongate, and far more *divided*, than is the case even in those genera which shew an unmistakeable affinity with the *Hylastidæ*, the latter of them being (somewhat after the fashion, however, that we observe in *Calyciforus*) in a different *plane* from the former; and yet in other particulars—as, for instance, in the increased length and diminished breadth of its rostrum, its posteriorly-unasperated elytra, and its unapproximated anterior coxæ—*Xenocnema* is absolutely *more* on the normal Cossonideous pattern than such groups as *Stenoscelis*, *Dendroctonomorphus*, and *Tomolips*, in which the body is obtusely cylindrical, and more or less roughened behind, the rostrum exceedingly short and broad, and the anterior legs practically contiguous. Altogether therefore I am inclined to place it nearer than those forms to the *Rhyncoli* and typical *Cossonides*, whilst at the same time acknowledging its evident relationship with the Hylastids in the very significant structure of its tibiæ. These latter indeed are quite unprecedented in any of the Cossonids which have hitherto come beneath my notice,—they not only having their tibial hook obsolete (an eccentricity which we perceive in a few exceptional genera, such as *Thaumastophasis*, *Aorus*, and *Lipancylus*), but (which is far more important) being expanded towards their outer apex (more particularly however as regards the four hinder ones) into a lamelliform *spinose* process; whilst the *inner* angle is armed with a small spur, which (after the manner so common amongst the Scolytidiens) is developed in the front pair into a comparatively lengthened sub-horizontal spine.

Apart from these eccentricities of tibiæ and abdomen, *Xenocnema* is remarkable for its rather short and thick, but somewhat parallel and depressed, body,—which is densely and sharply sculptured, and of a piceo-ferruginous hue; for its rostrum (which is robust, but not particularly abbreviated) being divided by a distinct line (above and below) from the forehead; for its antennæ being almost medial as regards their insertion; for its eyes being prominent; for its prothorax being large, elongate, and subquadrangular; and for the very unusual sculpture of its elytra,—the interstices of which are costiform, each costa however being as it were *divided into two* by a densely punctulated central stria.

115. Stereocorynes (*nov. gen.*).—It is the European *Rhyncolus truncorum*, Germ., which has afforded the details for the present genus; and it is surprising to me how that remarkably-constructed insect could ever have been associated with the *R. ater*, and the various other species on the true *Rhyncolus*-type. Thus, not only is it more strictly cylindrical and obtusely rounded behind, but its rostrum and antennæ are on a totally different pattern,—the former being short and subparallel in the males, but still shorter and subtriangular in the females; whilst the latter (which are inserted considerably behind the middle) are, as compared with those of the *Rhyncoli*, exceedingly abbreviated and glabrous, the scape particularly being reduced in length, the funiculus-joints closely compacted together, and the club solid, *compressed*, and ob-triangular (being straightly truncated at its apex). In other respects *Stereocorynes* is conspicuous for its eyes being extremely sunken or depressed (instead of prominent as in *Rhyncolus*); for its prothorax being very convex, and quite unconstricted in front; for its femora, particularly the front pair, being considerably thickened, and with a faint appearance beneath of an obtuse anguliform tooth; and for its four anterior coxæ being (as in *Hexarthrum*) so manifestly more approximated as to be well nigh contiguous.

116. Hexarthrum (Wollaston, *Ann. Nat. Hist.* v. 448. 1860).—The genus *Hexarthrum* was established by myself thirteen years ago for the reception of a *Rhyncolus*-like insect, with a 6-jointed funiculus and subasperated elytra, which had been captured in various houses, and outhouses,

at Madeira, and the habits of which seem to be very similar to those of *Pentarthrum* and *Amaurorrhinus;* and it is only now that I have been enabled to identify it, through the examination of more extensive material, with the European *Rhyncolus culinaris*, of Germar,—a species which does not appear to be common in collections, or one which is very extensively known. Nevertheless I can detect no difference between the Madeiran insect and a type of the latter which has been communicated by Mr. Gray; and I do not hesitate therefore in regarding them as identical. Yet the *generic* characters of *Hexarthrum* remain clear and well defined, and afford another instance of the loose manner in which so many discordant forms have been associated with the *Rhyncoli*, and of the little care which appears to have been bestowed by certain Coleopterists on the *structural* features of their published species.

So far as I am aware, *Hexarthrum* is the only member of the *Cossonidæ* (outside the very anomalous subfamily *Onycholipides*) in which the funiculus is composed of only six articulations; and it is further remarkable for its rostrum being short and narrowly subtriangular, for its antennæ bring greatly abbreviated (even more so perhaps than in *Stereocorynes*), for its elytra being shortly cylindric, obtusely rounded behind, and subasperated (particularly as regards their posterior half), and for its four anterior coxæ being subcontiguous. As in *Stereocorynes* and *Tomolips*, its antennæ are not only much reduced in length (especially the scape), but are likewise *glabrous*, and with the funiculus-joints very closely compacted together; nevertheless the club is more rounded, or less apically-truncate, than in those genera. Its prothorax also (which is unconstricted in front) is nearly unmargined at the base; its first and second abdominal segments are divided by an unusually distinct line; and its entire surface, although appearing quite bald, will be seen, when viewed beneath the microscope, to be very sparingly besprinkled (which is not the case in *Stereocorynes* and *Tomolips*) with a short and most minute pubescence.

I may state that a *Hexarthrum* has been detected lately by Mr. G. Lewis in Japan, closely allied to (but nevertheless unquestionably differing from) the European and Madeiran *H. culinare;* and also that the European *Rhyncolus submuricatus*, Bohm., appears, if I may trust an example now before me from the collection of John

Gray, Esq., and which almost completely satisfies the published diagnosis of that insect, to be likewise a *Hexarthrum*.

117. Tomolips (*nov. gen.*).—With the exception of *Pentamimus* from Australia, the present genus offers the only exception (as far as I have hitherto observed), *outside the subfamily Pentarthrides*, in which the funiculus is composed of but five joints; nevertheless it is so manifestly related to *Hexarthrum* (in which that organ is 6-articulate), and likewise to the sub-Hylastideous groups around *Brachytemnus*, that it is *as* impossible to consider it a Pentarthrid as it would be to place *Hexarthrum* (on account of the number of its funiculus joints) amongst the anomalous types of the *Onycholipides*. And hence, so long as a natural arrangement (and not a purely artificial one) is to be aimed at, I have practically no choice left me but to treat it as an exception in the subfamily *Cossonides*. It is a significant fact however that its nearest known ally should be a genus in which the funiculus-articulations are likewise reduced in number,—in that instance however (from the normal seven) to *six;* and it would look therefore as if these immediate forms were subject *par excellence* (in that particular respect) to instability. Be this however as it may, I will merely repeat that the two genera in question (namely *Hexarthrum* and *Tomolips*) are, with the exception of *Pentamimus* and *Tatracoptus*, the only instances, so far as I am aware, in the present subfamily, in which the funiculus is *otherwise than* 7-*jointed*,—it being composed of six articulations in the one, and of five in the other.

But, apart from this primary peculiarity in the structure of its funiculus, *Tomolips* is somewhat osculant between *Hexarthrum* and the strictly sub-Hylastideous genera—in which the rostrum is *extremely* short and broad, the eyes are less widely separated, and the sculpture is remarkably coarse; whilst in the *obtriangular* shape of its solid and compressed club it shews an equal affinity with the European *Stereocorynes*. However its posteriorly-asperated elytra is a character of considerable importance, and one which is likewise indicated (though to a less extent) in *Hexarthrum*. In its glabrous antennæ (the scape of which is much abbreviated, and the funiculus very compact), as well as in its four anterior coxæ being nearly contiguous, it is in perfect accordance with these imme-

diate forms ; but in its elytra being more produced (or less obtusely-rounded) behind, in its shoulders being rather suddenly and acutely porrected, and in the front tibiæ of its type being armed at their inner angle with a compressed *bifid* spur, there is a singularity about it which is essentially its own. The two species of *Tomolips* which are now before me were taken in Mexico, and are from the collection of Mr. Fry.

118. Dendroctonomorphus (*nov. gen.*).—It is for a *Hylastes*-, or *Dendroctonus*-like Cossonid from Ceylon, which (together with an allied species from Malabar, and a rather less typical one from Mexico) has been communicated by Mr. Fry, that I have been compelled to establish the present genus. In its structural peculiarities it is somewhat intermediate between *Brachytemnus* and *Stenoscelis*,—agreeing with the former in its conspicuous (though less largely developed) scutellum, comparatively elongate, almost unconstricted prothorax, the general character of its sculpture (which however is not *quite* so coarse), and in its perfectly simple third tarsal joint; but with the latter in its asperated elytra, greatly lengthened feet, more widely separated eyes, and less glabrous antennæ. In its thickened head, short, triangular rostrum, sunken eyes, and cylindrical body, it is in accordance with the whole of these sub-Hylastideous forms.

119. Brachytemnus (*nov. gen.*). — It is in order to receive the European *Rhyncolus porcatus*, Müll., and my nearly-allied *R. pinipotens* from the Canarian archipelago,* that I have proposed the present genus; and it seems marvellous to me now how those curious insects could ever have been included amongst the *Rhyncoli*—from which they appear to differ in nearly every detail of their

* My *B. pinipotens* (= *crassirostris*, olim), which I captured in an old fir-tree in the island of Grand Canary, is most closely allied to the *B. porcatus*, Müll., of Southern Europe. Its rostrum and prothorax however (the former of which is free from an anterior channel, whilst the latter is less sinuated on either side behind the middle) are just appreciably less coarsely and more sparingly punctured; its elytra (which have the shoulders less porrect) are a trifle more parallel, there being apparently no tendency to be even obsoletely widened posteriorly, and have their apical region less obtusely-desilient (or suddenly bent-downwards) ; and the club of its antennæ is rather more truncated in front. The underside also is somewhat less grossly punctured, and the first abdominal segment, which is *convexer*, is likewise a little more remotely so.

structure. Indeed in its thickened head, abbreviated, subtriangular rostrum, and depressed eyes, no less than in its greatly shortened antennæ and its long and slender feet, the genus has very much the sub-Hylastideous aspect of *Stenoscelis:* and it may be defined therefore to differ essentially from *Rhyncolus* in its much shorter and more triangular rostrum; in its larger and more sunken eyes, which are appreciably less *lateral* (or more sub-approximated above); in its prothorax being altogether more cylindrical and developed; in its *very* much more abbreviated antennæ (the scape of which is so reduced in length as to be even shorter than that of *Stenoscelis*,—indeed as short as in the European genera *Stereocorynes* and *Hexarthrum*, or as in *Calyciforus* and *Eurycorynes* from Brazil), the club of which, although compressed, is exceedingly rounded, solid, and abrupt; in its first and second abdominal segments being much more conspicuously divided from each other; in its legs and tarsi being slenderer (with the tibial hook more straightened, and the basal joint of the latter rather more elongate); and in its coxæ being more approximated,—the four hinder ones, in fact, being nearly contiguous. In its scutellum however being conspicuous, *Brachytemnus* recedes from *Stenoscelis*, and agrees better with the other immediately-allied forms.

120. Calyciforus (*nov. gen.*).—The very extraordinary insects, which have been communicated by Mr. Fry and Mr. Janson, for which the present genus is established, and which were captured in the provinces of Rio Janeiro and Bahia in Brazil, are amongst the most remarkable members of the *Cossonidæ* with which I am acquainted; and yet their affinities are, unquestionably, with such forms as the European *Brachytemnus*, *Eurycorynes* from Brazil, and *Stenoscelis*—from S^{t}. Helena, Southern Africa, and Japan. Indeed in its thickened head, short, subtriangular rostrum, and sunken, subapproximated eyes, as well as in its excessively abbreviated antennæ, its slender, filiform feet, and the fact of its four anterior coxæ being nearly contiguous, the genus has much marvellously in common with the first of those groups; nevertheless the *comparatively* large size of its members, and the deep and anomalous triangular excavation in the middle of their prothorax behind (immediately in front of the greatly developed scutellum), added to the extraordinary sculpture of their elytra (the sulci of which are wide, deep, opake, and

transversely strigose, whilst the interstices are broad, costate, and shining, and studded with a single series of large subasperated punctures), and their short, transverse, abrupt, anteriorly-truncated, cup- (or somewhat calyx-) shaped capitulum, are all of them characters which are essentially their own. In its prothorax being comparatively unconstricted in front *Calyciforus* is, likewise, on the *Brachytemnus*-type; nevertheless it is *impressed* anteriorly in the centre (which is not the case in that genus); and both the prothorax and elytra are coarsely margined at their respective bases. Its four anterior tibiæ are armed at their inner angle with a robust spine; and the hooks of all of them are powerfully developed. Its feet are as slender as, and if anything even more elongated than, in *Stenoscelis;* but their third joint is still narrower and more entire, being *perfectly* simple.

121. Eurycorynes (*nov. gen.*).—I am indebted to Mr. Janson and Mr. Fry for the remarkable Cossonid from which the details for the present genus have been drawn-out; and it has given me much pleasure in dedicating the species to the former of these eminent Coleopterists. Like *Calyciforus* it is South-American, having been received by Mr. Janson from the province of Minas Geraes in Brazil; while Mr. Fry's example appears to have been taken by himself near Rio Janeiro; and it is at once conspicuous for the very unusual structure of its greatly abbreviated antennæ,—the scape of which has the joints gradually more and more transverse and lamelliform, the last one of them being so thin as to be only just appreciable against the *enormously enlarged* club. This latter is most peculiar,—being exceedingly wide, transverse, and abrupt (more so indeed than in any member of the family with which I am acquainted). In its thickened head, and in the shortness of its triangular rostrum and antennæ, as well as in its sunken eyes and elongated slender feet, *Eurycorynes* has much in common with *Brachytemnus*, *Calyciforus*, and *Stenoscelis;* but it agrees best with the last of those three genera in the fact of its scutellum being nearly obsolete, and in its elytra being *asperated* (though less so, and in a different manner) both before and behind. Nevertheless, in reality, it is perhaps nearer to *Calyciforus*,—with which it agrees in its eyes being less widely separated on the forehead, in its prothorax being less shortened, in its elytra being broadly sulcated (though not quite

so coarsely so as in that group), with their costate interstices branded with a row of conspicuous subasperated punctures, in its four anterior coxæ (although very closely approximated) not being quite contiguous, and in the third articulation of its feet not being in the slightest degree widened, and remarkably simple. The punctation of its head and prothorax is extremely dense and substrigulose; and the latter has a polished line, or faint keel, evanescent before and behind, down the centre.

122. Stenoscelis (Wollaston, *Journ. of Ent.* i. 141. 1861).—Of all the Cossonids which have hitherto been described, perhaps *Stenoscelis* makes the nearest approach to the sub-Curculionideous forms of the *Hylastidæ*,—its shortly cylindric body, which is a little asperated (as well as just appreciably widened, and obtusely rounded) posteriorly, having much in common with such genera as *Dendroctonus*. In its thickened head, short, triangular rostrum, and sunken eyes, as well as in its exceedingly abbreviated antennæ and its elongated slender feet, it is on much the same pattern as the three preceding groups; nevertheless its prothorax is shorter, or more *transverse*, more constricted anteriorly, and subsinuate on either side in the middle, its four anterior coxæ are more completely approximated, and the third joint of its feet (although scarcely at all widened) is not *quite* simple,—being evidently, though minutely, bilobed. In the fact of its scutellum being nearly obsolete it has a greater affinity with *Eurycorynes* than with *Calciforus* or *Brachytemnus*; but its capitulum (which is oval, and on the ordinary type) is not in any degree anomalously developed, and agrees better therefore with the last of those three genera. The three exponents of it which have been hitherto detected are from the island of St. Helena, the Cape of Good Hope, and the Japanese archipelago.

Species novæ, in hôc Tractatu nunc descriptæ.

Genus 1. Notiomimetes.

Wollaston (*vide, ante, p.* 440).

Notiomimetes Pascoei, n. sp.

N. elliptico-fusiformis, depressiusculus, subnitidus, calvus, rufo-piceus; capite immerso, rostro parallelo, fere

haud sculpturato; prothorace elongato-subquadrato, elytris paulo angustiore, ad latera leviter rotundato, longe pone apicem profunde constricto, parum grosse sed haud densissime punctato; elytris ellipticis basi truncatis, dense substriato-punctatis; antennis pedibusque clare rufo-ferrugineis. Subtus grosse sed vix dense punctatus.

Long. corp. lin. vix 1.

Habitat Australiam meridionalem, a Dom. Masters juxta mare captus. Insectum inter *Cossonidas* anomalum, atque in memoriam Dom. F. P. Pascoe citatum.

Genus 2. PSILODRYOPHTHORUS.

Wollaston (*vide, ante, p.* 441).

Psilodryophthorus costatus, n. sp.

P. fusiformi-ellipticus, niger, subnitidus, fere calvus; capite rostroque (parallelo, crasso, cylindrico) sat dense punctatis; prothorace (magno, cylindrico-subquadrato, fere æquali) multo profundius grossiusque punctato; elytris (ellipticis, basi late arcuatim emarginato-truncatis) profunde punctato-sulcatis, interstitiis alte et argute costatis, postice simplicibus (nec cariniformibus); antennis tarsisque piceo-ferrugineis. Subtus grosse et profunde punctatus.

Long. corp. lin. 2.

Habitat ins. New Guinea, ad Saylee a Dom. Wallace deprehensus.

Genus 3. STENOMMATUS.

Wollaston (*vide, ante, p.* 441).

Stenommatus Fryi, n. sp.

S. ellipticus, niger sed densissime subsericato-velutinus; rostro elongato, gracili, arcuato, antice polito esculpturato piceo, postice longitudinaliter strigoso; fronte canaliculatâ; prothorace (elytris paulo angustiore) profunde et grosse punctato; elytris profunde punctato-sulcatis, interstitiis convexis, costiformibus; antennis tarsisque piceis, nudis, femoribus tibiisque subcinereo-velutinis. Subtus parum grosse (sed haud profunde et haud dense) punctatus.

Long. corp. lin. $1\frac{1}{3}$.

Habitat Mexico, a Dom. A. Fry benigne communicatus, cujus in honorem nomen triviale proposui.

Genus 6. Synommatus.

Wollaston (*vide, ante, p.* 443).

Synommatus confluens, n. sp.

S. ellipticus, opacus, niger sed inæqualiter subfulvescenti sericato-lutosus; rostro elongato, arcuato-cylindrico, vestito, ad apicem ipsissimum calve nitido piceo, inter antennas canaliculato; prothorace (elytris multo angustiore) subovali-cylindrico, postice subangustiore, antice leviter constricto, profunde et grossissime punctato; elytris antice latis et valde truncatis, postice attenuatis, profunde punctato-sulcatis (sulcis latissimis et punctis maximis), suturâ interstitiisque (præsertim alternis) convexis, costiformibus; antennis pedibusque piceis, opacis, nudis, capitulo nitido, clariore, et ad apicem internum (una cum femoribus tibiisque) dense vestito. Subtus subopacus, grossissime sed parce et haud valde profunde punctatus.

Long. corp. lin. $2\frac{1}{2}$.

Habitat Borneo, ad Sarawak a Dom. Wallace repertus. Coll. Pascoe.

Genus 9. Lyprodes.

Wollaston (*vide, ante, p.* 444).

Lyprodes cylindricus, n. sp.

L. angustus, cylindricus, picco-niger, opacus, squamis subcinereis lutosis obtectus; rostro elongato, parallelo, oculis prominentibus; prothorace (elytrorum latitudine) valde profunde et grosse punctato, antice asperato; elytris profunde et grosse sulcato-punctatis, interstitiis paulo elevatis; antennis (subgracilibus) tarsisque (brevibus, latis) ferrugineis. Subtus parum grosse, sed parcissime et levissime subasperato-punctatus, necnon (oculo fortissime armato) setulis brevissimis cinereis remotis obsitus.

Long. corp. lin. vix $1\frac{1}{4}$.

Habitat ins. Malayenses, in Sula a Dom. Wallace deprehensus.

Genus 10. Phlœophagomorphus.

Wollaston (*vide, ante, p.* 445).

Phlœophagomorphus angusticollis, n. sp.

P. elongate cylindrico-ovatus, convexiusculus, nitidissimus, subpellucide castaneus; rostro (brevi, lato, ad basin strangulato) capiteque (convexo) nigrescentioribus, illo sat

distincte sed hôc parcius levissimeque punctulatis; prothorace (sub-parvo, elytris angustiore, cylindrico-ovato) multo profundius punctulato; scutello transversim impresso; elytris (elongate cylindrico-ovatis, basi sinuatim truncatis) profunde punctato-, aut subcrenato-striatis, interstitiis convexiusculis ac minutissime uniseriatim punctulatis; antennis, tibiis tarsisque piceo-ferrugineis, femoribus sensim obscurioribus. Subtus sat grosse, sed remote et leviter, punctatus.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Novam Granadam, a Dom. Fry communicatus.

Genus 11. PSEUDOPENTARTHRUM.

Wollaston (*vide, ante, p.* 445).

Pseudopentarthrum phlœophagoides, n. sp.

P. breviter cylindricum, subnitidum, calvum, nigrum; rostro (brevi, lato parallelo) minute punctulato; prothorace ovali, ad latera æqualiter rotundato, subconvexo, multo grossius profundiusque sed vix densissime punctato; elytris parallelis, cylindricis, profunde striato-punctatis, interstitiis convexiusculis ac minutissime (vix perspicue) uniseriatim punctulatis; antennis pedibusque breviusculis et (præsertim illis) rufescentioribus. Subtus in sternis remote sed grosse punctatum; abdominis segm.^{tis} 1mo et 2do fere impunctatis.

Long. corp. lin. $1\frac{1}{4}$.

Habitat Mexico; in coll. Dom. Fry.

Genus 12. XENOSOMATIUM.

Wollaston (*vide, ante, p.* 446).

Xenosomatium tibiale, n. sp.

X. angustulum, parallelum, convexiusculum, nitidum, piceo-ferrugineum; capite rostroque (arcuato, robusto, ad basin strangulatim contracto) parce, levissime et minute punctulatis; oculis maximis, prominentibus, prothorace elongato, triangulari-cylindrico (ante basin latitudine elytrorum), paulo distinctius tamen minute parceque punctulato, pone apicem leviter constricto; elytris tenuiter punctato-striatis, ad basin sensim rufescentioribus; antennis pedibusque fere concoloribus, scapo (robusto, valde excurvato) sub-clariore. Subtus alutaceum, minute et parce punctulatum.

Long. corp. lin. 1.

Habitat ins. Malayenses, a Dom. Wallace captum. Coll. Pascoe.

Genus 13. PENTARTHRUM.

Wollaston, Ann. Nat. Hist. xiv. 129 (1854).

§ I. *Funiculi art.us 2dus sequentibus sensim longior.*

Pentarthrum zealandicum, n. sp.

P. subfusiformi-cylindricum, subnitidum, piceum elytris plus minus pallidioribus; prothorace triangulari-ovato, convexo, dense sed haud grosse punctato, mox pone apicem sat profunde constricto; elytris vel piceo-ferrugineis vel clare rufo-piceis, sed per suturam et in limbo plus minus nebuloso-obscurioribus, striato-punctatis, interstitiis transversim rugulosis ac minutissime uniseriatim punctulatis; antennis pedibusque longiusculis, clare et pallide rufo-piceis; tarsorum art.o 3tio fere simplici. Subtus minute et leviter punctulatum.

Mas, rostro latiore, parallelo, depressiusculo, sat profunde punctato, necnon in medio canaliculato; antennis in medio ejus insertis.

Fœm., rostro graciliore, cylindrico, fere esculpturato, integro, ad basin paululum strangulato; antennis pone medium ejus insertis.

Long. corp. lin. 2.

Habitat Novam Zealandiam, a Dom. Janson communicatum.

(*Obs.*—Species *P. Huttoni*, europæo, simillimum; sed differt corpore paululum majore latiore ac minus fusiformi, prothorace sensim angustiore, pone medium magis rotundato, et minus grosse punctato, elytris sublevius sculpturatis ac pallidioribus, sed tamen per suturam necnon in limbo plus minus obscuratis, scapo sublongiore graciliore, rostro masculo canaliculato, et fœmineo ad basin paulo evidentius strangulato.)

Pentarthrum nitidum, n. sp.

P. fusiformi-cylindricum, nitidum, nigro-piceum; prothorace triangulari-ovali, convexo, subremote sed grosse punctato, mox pone apicem sat profunde constricto; elytris subfusiformibus basi truncatis, striato-punctatis, interstitiis transversim rugulosis ac minutissime uniseriatim punctulatis, obsoletissime subæneo-tinctis; antennis pedibusque piceis; tarsorum art.o 3tio simplici. Subtus dense et argute punctatum.

Mas, rostro latiusculo, parallelo, sat dense minuteque punctulato; antennis in medio ejus insertis.

Fœm. adhuc latet.

Long. corp. lin. $1\frac{3}{4}$.

Habitat Chili, a Dom. Fry benigne communicatum.

(*Obs.*—Corpore subfusiformi *P. Huttono* simillimum; sed paulo minus, nitidius, ac nigro-piceum, nec rufo-castaneum, prothorace convexiore et minus dense punctato, elytris minus rugulosis, capitulo minus abrupto, pedibusque subbrevioribus, tarsorum art.° 3^{tio} simplici, nec sub-bilobo.)

Pentarthrum affine, n. sp.

P. præcedenti simillimum, sed vix subminus, prothorace paululum minus convexo minusque ad latera rotundato (sc. magis triangulari), sensim densius punctato, elytris subpicescentioribus, striis profundioribus subdensiusque punctatis, interstitiis subconvexioribus ac magis rugulosis.

Long. corp. lin. vix $1\frac{3}{4}$.

Habitat Chili, a Dom. Fry communicatum.

Pentarthrum longirostre, n. sp.

P. fusiformi-cylindricum, nitidum, nigro-piceum; rostro elongato, subparallelo (postice, præsertim in ♂, paululum angustiore), arcuato, minutissime leviter et sat dense punctulato, a fronte (fere impunctatâ) lineâ distincte diviso; oculis prominentibus; prothorace triangulari-ovali, convexo, subgrosse punctato, mox pone apicem profunde constricto; elytris subfusiformibus basi truncatis, subdilutioribus, punctato-striatis, interstitiis leviter transversim rugulosis ac minutissime uniseriatim punctulatis; antennis pedibusque longiusculis, rufo-piceis; tarsorum art.° 3^{tio} lato et valde profunde bilobo. Subtus grosse et sat profunde punctatum.

Long. corp. lin. $1\frac{2}{3}$—2.

Habitat Novam Zealandiam; ab Auckland misit Dom. Lawson. Ad describendum communicavit Dom. Sharp.

(*Obs.*—Inter *Pentarthra* insigne rostro elongato, subgracili, postice, præsertim in ♂, sensim angustiore, a fronte lineâ conspicue diviso, necnon tarsorum art.° 3^{tio} lato ac profunde bilobo.)

§ II. *Funiculi art.*^{us} 2^{dus} *haud sequentibus longior.*

Pentarthrum subsericatum, n. sp.

P. subcylindricum, subopacum, pallide rufo-ferrugineum, ac minutissime parcissimeque sericatum; prothorace ovato-triangulari, densissime sed vix grosse punctato, mox pone apicem profunde constricto; elytris dense et parum grosse striato-punctatis, interstitiis obsolete transversim rugulosis; antennis pedibusque breviusculis; tarsorum art.° 3^{tio} simplici. Subtus minute et leviter punctulatum.

Mas, rostro latiore, parallelo, depressiusculo, sat profunde denseque ruguloso-punctato; antennis in medio ejus insertis.

Fœm., rostro graciliore, cylindrico, multo minutius punctulato, ad basin paululum strangulato; antennis mox pone medium ejus insertis.

Long. corp. lin. vix $1\frac{1}{2}$.

Habitat Novam Zealandiam, a Dom. Janson communicatum.

(*Obs.*—Species in hoc genere anomala corpore fere opaco et minutissime parceque sericato, nec omnino calvo).

Pentarthrum rugosum, n. sp.

P. cylindricum, dense, grosse, et rugose sculpturatum, subopacum, piceum; rostro breviusculo, crasso, parallelo, oculis prominentibus, densissime et grossissime punctato-ruguloso; prothorace subtriangulari-ovato, densissime et grosse punctato, mox pone apicem profunde constricto; elytris dense striato-punctatis (punctis magnis), interstitiis densissime transversim rugulosis; antennis pedibusque breviusculis, crassiusculis, paulo clarioribus; tarsorum art.° 3^{tio} evidenter sed minute bilobo. Subtus profunde et parum dense punctatum.

Long. corp. lin. $1\frac{1}{3}$.

Habitat ins. New Guinea, ad Saylee a Dom. Wallace deprehensum.

Pentarthrum sublævigatum, n. sp.

P. angustum, fusiformi-cylindricum, leviter sculpturatum, submitidum, clare pallido-castaneum; rostro longiusculo, crassiusculo, subparallelo sed pone antennas paulo angustiore (aut substrangulato), oculis magnis,

prominentibus, minute et leviter punctulato; prothorace triangulari-ovato, minute et leviter punctulato, mox pone apicem paululum constricto; elytris tenuiter leviterque substriato-punctatis (punctis parvis); antennis pedibusque breviusculis, illis paulo minus incrassatis; tarsorum art.° 3^tio^ simplici.

Long. corp. lin. $1\frac{1}{4}$.

Habitat ins. Malayenses, a Dom. Wallace in Sula captum. Coll. Pascoe.

Pentarthrum Grayii, n. sp.

P. angustulum, cylindricum, subnitidum, piceum elytris paulo rufescentioribus; rostro crassiusculo, parallelo, oculis valde prominentibus, dense et profunde punctato; prothorace elongato, subconico, grosse punctato (punctis versus latera longitudinaliter subconfluentibus), mox pone apicem profunde constricto; elytris striato-punctatis, interstitiis transversim rugulosis ac minutissime parcissimeque (juxta suturam dense) uniseriatim punctulatis; antennis pedibusque crassiusculis, paulo clarioribus; tarsorum art.° 3^tio^ simplici, ult.^mo^ gracili.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Braziliam, a Dom. J. Gray benigne donatum, cujus in honorem nomen triviale stabilivi.

(*Obs.*—Species corpore cylindrico, prothorace elongato subconico, tarsorumque art.° 3^tio^ simplici et ult.^mo^ gracili *P. cylindrico*, mihi, affinis; sed differt corpore paulo majore et obscuriore, rostro subbreviore, conspicue latiore atque densius grossiusque punctato, prothorace antice subprofundius constricto, punctis versus latera magis evidenter longitudinaliter subconfluentibus, necnon antennis pedibusque sensim crassioribus.)

Pentarthrum nigrum, n. sp.

P. elongatum, crassum, fusiformi-cylindricum, convexum, nitidum, nigrum; rostro longiusculo, crassiusculo, parallelo, oculis valde prominentibus, parce sed profunde punctato; prothorace elongato, subconico, grossissime et profunde sed haud dense punctato, antice subintegro (vix constricto); elytris subfusiformi-parallelis basi undulatim truncatis, convexis, grosse punctato-sulcatis, interstitiis convexis ac minutissime parcissimeque uniseriatim punctulatis; antennis pedibusque crassiusculis, illis rufo-

piceis, his piceis ; tarsorum art.° 3^tio^ simplici. Subtus profunde, parce, et grosse punctatum.

Long. corp. lin. 2.

Habitat in Tasmaniâ ; communicavit Dom. Pascoe.

(*Obs.*—Inter *Pentarthra* distinctum corpore magno, tamen angustulo, convexo, nigro, et grosse sculpturato, prothorace antice vix constricto, elytrisque ad basin undulatim truncatis, interstitiis convexis subcostiformibus.)

Genus 14. Sericotrogus.

Wollaston (*vide, ante, p.* 446).

Sericotrogus subænescens, n. sp.

S. angustus, elongate subparallelo-fusiformis, subæneo-piceus, nitidiusculus, pubeque grossâ demissâ subæneo-cinereâ parce vestitus ; capite prothoraceque profunde punctatis, illo valde exserto (rostro longiusculo, arcuato, dense ruguloso-punctulato, oculis prominentibus), hôc subovali, convexo, ad latera subæqualiter rotundato, antice fere integro, necnon in lineâ mediâ sublæviore ; elytris longe fusiformibus basi truncatis (sc. antice sensim angustioribus), leviter punctato-striatis ; antennis pedibusque rufo-piceis (illis tarsisque clarioribus), capitulo ferrugineo. Subtus subalutaceus, parcissime et minutius pubescens, antice vix punctatus, sed in meso- et meta-sternis abdominisque segm.^tis^ 1mo et 2do valde profunde grosseque punctatus.

Long. corp. lin. $1\frac{1}{3}$—$1\frac{1}{2}$.

Habitat Nov. Zealandiam, ab Auckland missus ; a D. Sharp amice donatus, necnon in coll. Dom. Lawson.

Genus 15. Stenotrupis.

Wollaston (*vide, ante, p.* 447).

Stenotrupis crassifrons, n. sp.

S. angustissimus, parallelus, depressus, subnitidus, piceus ; capite prothoraceque dense et argute punctulatis, illo elongato-ovali crasso valde exserto, hôc ovato-triangulari antice gradatim valde angustato et pone apicem vix constricto ; elytris parallelis, ad apicem minute pubescentibus, tenuiter punctulato- (aut fere crenulato-) striatis, interstitiis transversim subreticulato-rugatis ; antennis piceo-ferrugineis ; pedibus rufo-piceis.

Mas, rostro breviore, crassiore, apicem versus sensim magis dilatato.

Long. corp. lin. vix $1\frac{3}{4}$.

Habitat ins. Malayenses, in Makian a Dom. Wallace deprehensus.

Stenotrupis acicula, n. sp.

S. præcedenti similis sed multo minor, etiam angustior, ac omnino pallidus (oculis solis nigris); capite prothoraceque parcius et profundius punctatis, elytris densius et distinctius striato-punctatis, pedibusque brevioribus.

Long corp. lin. 1.

" Catolethrus palmeus, Schön." (in litt.), sec. coll. Pascoeano.

Habitat ins. Cuba, a Dom. Pascoe communicatus.

Genus 16. Microcossonus.

Wollaston (*vide, ante, p.* 447).

Microcossonus Wallacei, n. sp.

M. angustus, parallelus, depressus, nitidus, pallide rufoferrugineus; rostro brevi, crasso, antice paulatim dilatato, vix punctulato; capite elongato, crasso, exserto, obscuriore, et distinctius sed parce punctulato; prothorace magno, ovato-triangulari, multo argutius punctato; elytris parallelis, leviter substriato-punctatis, suturâ vix obscuriore. Subtus parce et levissime punctatus.

Long. corp. lin. vix 1.

Habitat Nov. Guinea; ad Saylee captus a Dom. Wallace, cujus in honorem nomen triviale dedi.

Genus 17. Cossonideus.

Wollaston (*vide, ante, p.* 448).

Cossonideus Pascoei, n. sp.

C. fusiformi-parallelus, depressus, subnitidus, piceoferrugineus; capite profunde punctato, punctis in rostro (breviusculo, crasso, parallelo) obsoletioribus; oculis maximis, valde prominentibus; prothorace triangulari-ovato, subalutaceo necnon grosse profundeque punctato, in medio late longitudinaliter impresso; elytris clarioribus, rufotestaceis sed in limbo (præsertim postice) necnon minus evidenter per suturam obscurioribus, grosse et profunde

sulcato-punctatis; antennis pedibusque (elongatis, robustis) piceis. Subtus valde profunde, sed vix dense, punctatus.

Long. corp. lin. vix $2\frac{1}{2}$.

Habitat Australiam occidentalem, a DD. Pascoe et Fry communicatus.

Genus 19. Tychiosoma.

Wollaston (*vide, ante, p.* 449).

Tychiosoma gracilirostre, n. sp.

T. elliptico-oblongum, latiusculum, depressum, nitidum, pallide rufo-castaneum; capite parvo, inter oculos parce punctato et ibidem minute foveolato; rostro longissimo, gracillimo, parallelo, cylindrico, impunctato, et, una cum prothorace (parvo, subtriangulari), politissimo, hôc parce et minutissime punctulato, æquali; elytris suboblongis basi truncatis, grosse punctato- (aut fere crenato-) sulcatis, interstitiis postice et versus latera convexis, postice gradatim suffuse obscurioribus; antennis pedibusque elongatis, illis gracilibus, his crassis. Subtus testaceo-castaneum, nitidissimum, fere impunctatum, prosterno inter coxas anticas fulvo-pubescenti.

Long. corp. lin. 3.

Habitat ins. Philippine, a Dom. Pascoe communicatum.

Genus 20. Leptomimus.

Wollaston (*vide, ante, p.* 449).

Leptomimus fragilis, n. sp.

L. angustissimus, subdepressus, opacus, rufo-brunneus; capite parvo, rostro prothoraceque longissimis, densissime et rugose punctatis, illo gracillimo, hôc subovato-triangulari; elytris (prothorace vix angustioribus) parallelis, densissime et rugose striato-punctatis; antennis elongatis, gracilibus; pedibus posterioribus brevibus. Subtus densissime et profunde ruguloso-punctatus.

Long. corp. lin. vix 2.

Habitat ins. Malayenses, in Gilolo a Dom. Wallace repertus.

Leptomimus delicatulus, n. sp.

L. præcedenti similis, sed subminor et etiam angustior, paululum magis cylindricus minusque depressus; rostro etiam graciliore et minus rugose sculpturato; prothorace pone medium sensim minus rotundato-ampliato; antennis

paulo brevioribus; necnon corpore toto dense sed breviter setuloso-pubescente.

Long. corp. lin. $1\frac{2}{3}$.

Habitat ins. Malayenses, inter *bambusas* a Dom. Wallace in Gilolo deprehensus.

Genus 24. Microtribus.

Wollaston (*vide, ante, p.* 451).

Microtribus Huttoni, n. sp.

M. fusiformis, subnitidus, calvus (solum versus basin elytrorum, et ipsissimam prothoracis, pilis perpaucis fulvescentibus parce obsitus,) nigro-piceus; capite convexo, fere haud punctulato; rostro (longiusculo, graciliusculo, parallelo) distinctius sed parce punctulato; prothorace (ovali, convexo, utrinque æqualiter rotundato) sat grosse et profunde punctato; elytris (fusiformibus basi truncatis) subalutaceis, paulo subtransversim malleato-rugulosis et obsolete remoteque subundulatim subpunctulato-lineatis; antennis pedibusque longiusculis, picescentioribus. Subtus alutaceus et parcissime punctatus (punctis in sternis maximis ac profundis, sed in abdomine gradatim multo levioribus ac minutioribus).

Long. corp. lin. $1\frac{2}{3}$.

Habitat in Novâ Zealandiâ, a Dom. F. W. Hutton deprehensus, cujus in honorem nomen triviale proposui.

Genus 25. Mesoxenomorphus.

Wollaston (*vide, ante,* p. 451).

Mesoxenomorphus africanus, n. sp.

M. angustulus, fusiformis, nitidus, calvus, piceus; rostro breviusculo, latiusculo, subparallelo, dense et minute punctulato, oculis minutissimis, prominentibus; prothorace elongato, triangulari-ovato, convexiusculo, paulo distinctius parciusque punctato; elytris cylindrico-fusiformibus, leviter substriato-punctatis, interstitiis depressis et minutissime uniseriatim punctulatis; antennis pedibusque brevibus, crassiusculis, rufo-piceis. Subtus sat profunde et grosse (sed in abdominis segm.^{tis} 1mo et 2do parcius ac leviter) punctatus.

Long. corp. lin. $1\frac{1}{2}$.

Habitat Africam australem (sc. Caffrariam), a Dom. E. W. Janson communicatus.

Genus 26. Heteropsis.

Wollaston (*vide, ante, p.* 452).

Heteropsis Lawsoni, n. sp.

H. angustus, parallelus, depressiusculo-cylindricus, nitidus, piceo-castaneus; rostro a capite (fere impunctato) lineâ distincte diviso, brevi et (præsertim in ♂) latissimo, postice paulo angustiore, depressiusculo, subarcuato, dense et minute punctulato; prothorace elongato, ovato-triangulari, antice leviter constricto, paululum profundius punctulato; elytris parallelis, leviter punctato-striatis, interstiliis minutissime et parce uniseriatim punctulatis; antennis pedibusque paulo clarioribus. Subtus paulo grossius sed vix profunde punctatus.

Long. corp. lin. 1—1¼.

Habitat Novam Zealandiam; ab Auckland misit Dom. Lawson, cujus in honorem nomen specificum dedi.

Genus 30. Halorhynchus.

Wollaston (*vide, ante, p.* 453).

Halorhynchus cæcus, n. sp.

H. ovato-fusiformis, nitidus, clare rufo-piceus, pilisque longissimis cinereis parce obsitus, rostro breviusculo, crasso, parallelo, parce punctato, versus apicem obscuriore; prothorace (elytris sensim angustiore) ovali, profunde et parce punctato; elytris subovalibus basi truncatis, inæqualibus (sc. remote longitudinaliter subcostatis,—costis regulariter interruptis, tuberculos elongatos postice acutiusculos efficientibus); pedibus vix obscurioribus. Subtus nitidissimus et fere haud punctatus, sed longe et parce pilosus.

Long. corp. lin. 1⅓.

Habitat Australiam occidentalem, ad Freemantle captus; a Dom. Pascoe benigne communicatus.

Genus 44. Thaumastophasis.

Wollaston (*vide, ante, p.* 460).

Thaumastophasis oculatus, n. sp.

T. breviter oblongus, crassus, convexiusculus, nitidiusculus, grosse sed parce pallidulo-sericatus; capite prothoraceque rufo-piceis, sed elytris clare rufo-testaceis; rostro (breviusculo, crassiusculo, parallelo) rugulose et confuse subpunctato; oculis maximis, sat prominentibus; capite prothoraceque dense et profunde punctatis, hôc

(parvo, elytris multo angustiore) submalleato-inæquali sed tamen antice vix constricto; elytris (breviter cylindricis, basi undulatim truncatis) grosse substriato-punctatis, interstitiis minutissime parceque sub-uniseriatim punctulatis, in disco antico leviter bi-impresso; antennis pedibusque elongatis, illis gracilibus rufo-testaceis, his crassis rufo-ferrugineis. Subtus rufo-piceus, grosse sed leviter et parce punctatus, setulisque pallidioribus demissis irroratus.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Australiam meridionalem, ad Gawler deprehensus. A Dom. Pascoe amice communicatus.

Genus 45. Himatium.

Wollaston (*vide*, *ante*, *p.* 461).

Himatium pubescens, n. sp.

H. angustum, cylindricum, depressiusculum, nitidiusculum, rufo-piceum, longe sed parce fulvo-pubescens; capite convexo, esculpturato; rostro angustulo, parallelo, sat profunde et inæqualiter ruguloso-punctato; prothorace ovato-triangulari, antice conspicue constricto, valde profunde grosseque punctato; elytris (prothorace paulo latioribus) parallelis, cylindricis, dense, profunde et grosse striato-punctatis, interstitiis angustis depressis et minute uniseriatim punctulatis; antennis pedibusque clare rufo-ferrugineis, illarum capitulo fere testaceo. Subtus profunde et grosse punctatus.

Long. corp. lin. circa $1\frac{1}{2}$.

Habitat Indiam australem (Malabar), a Dom. Fry communicatum.

Genus 46. Pholidonotus.

Wollaston (*vide*, *ante*, *p.* 461).

Pholidonotus squamosus, n. sp.

P. angustulus, subopacus, piceus sed squamis sublutosis setisque crassis suberectis, omnibus subcinereis, plus minus vestitus; rostro angusto, elongato, subparallelo, recto, densissime punctulato-ruguloso; prothorace ovato-triangulari, subter squamis densissime grosseque punctato; elytris subparallelis, grosse denseque substriato-punctatis (punctis magnis, sed striis obsoletis); antennis tarsisque piceo-testaceis; femoribus tibiisque crassis, rufo-piceis setoso-squamosis. Subtus grosse et densissime punctatus, sed

setulis brevibus robustis subcinereis demissis parce adspersus.

Long. corp. lin. $1\frac{1}{3}$.

Habitat Borneo; ad Sarawak collegit Dom. Wallace. Communicavit Dom. Pascoe.

Genus 47. COPTORHAMPHUS.

Wollaston (*vide, ante, p.* 462).

Coptorhamphus subfasciatus, n. sp.

C. parallelo-oblongus, subopacus, niger, setis crassis (in parte suberectis) aureo-fulvescentibus parce obsitus necnon in elytris subfasciatim decoratus; rostro (a capite profunde strangulatim diviso) elongato, gracili, parallelo, arcuato, argute longitudinaliter 3-costato, postice fulvo-setoso; capite usque ad oculos (magnos sed demissos ac subinferiores) immerso; prothorace (elytris multo angustiore) subovali basi truncato, antice leviter constricto, grossissime profunde et densissime punctato, et in disco (mox pone medium) foveâ rotundatâ magnâ impresso; elytris grosse et profunde substriato-punctatis, striis antice obsoletis sed postice profundis, utrinque longe pone basin late impressis, obsolete sub-trifasciatim fulvo-setoso ornatis; antennis longiusculis, rufo-ferrugineis (scapo et capitulo clarioribus); pedibus valde robustis, piceis, squamosis; femoribus subtus longe denticulatis. Subtus grosse et valde profunde punctatus (punctis in regione centrali minoribus).

Long. corp. lin. $2\frac{1}{4}$.

Habitat ins. Java; benigne communicavit Dom. Pascoe.

Coptorhamphus strangulatus, n. sp.

C. angustulus, subcylindricus, subopacus, piceo-niger, setulis brevissimis subdemissis cinereis parcissime irroratus; rostro (a capite profunde strangulatim diviso) elongato, gracili, parallelo, arcuato, sat grosse, sed parce leviter et confuse, sublongitudinaliter punctato ac obsoletissime costato; capite usque ad oculos (magnos sed demissos ac subinferiores) immerso, minute leviterque punctulato; prothorace (elytris vix angustiore) suboblongo basi truncato, antice fere integro, grosse punctato, et in disco (mox pone medium) foveâ rotundatâ valde profundâ argute impresso; elytris grosse sed leviter substriato-punctatis, striis postice profundioribus; antennis rufo-piceis (scapo et capitulo multo clarioribus); pedibus robustis, piceis, minute

cinereo-squamosis ; femoribus subtus minute denticulatis. Subtus grosse sed parce punctatus.

Long. corp. lin. 2.

Habitat ins. Borneo, ad Sarawak a Dom. Wallace repertus. In coll. Dom. Pascoe.

Genus 49. Brachyscapus.

Wollaston (*vide, ante, p.* 463).

Brachyscapus crassirostris, n. sp.

B. suboblongus, convexiusculus, nitidiusculus, calvus, ater ; rostro (brevi, crasso, triangulari) parce et leviter punctulato, et, una cum prothorace (ovali, convexo, utrinque subæqualiter rotundato), alutaceo ; hôc elytris conspicue angustiore, multo grossius profundiusque punctato ; elytris profunde et grosse sulcato-punctatis, interstitiis convexiusculis ac minutissime parcissimeque punctulatis ; antennis pedibusque piceis, illis tarsisque paulo clarioribus. Subtus parce sed grossissime, et parum profunde, punctatus.

Long. corp. lin. $1\frac{3}{4}$.

Habitat Africam australem, a Natal missus. In coll. Dom. Fry.

Genus 50. Phlœophagosoma.

Wollaston, Trans. Ent. Soc. Lond. 23. (1873).

(Subgenus Amorphorhynchus, Woll.)

Phlœophagosoma sinuaticolle, n. sp.

P. subparallelo-fusiforme, depressum, nitidum, politum, atrum ; rostro arcuato, supra in medio convexo aut subgibboso et ibidem gradatim subampliato (quare antice subattenuato), fere impunctato ; capite parvo, angusto, oculis magnis sed subdemissis ; prothorace (elytris angustiore) subquadrato, apice subito acuminato et ibidem profunde constricto, fere impunctato (punctulis solum minutissimis parce adsperso), ad basin ipsam bisinuato (nec recte terminato), quare in medio (ante scutellum) quasi acuminate producto ; elytris subparallelis (a basi paulatim vix subattenuatis), profunde subcrenato-lineatis, interstitiis latis ac impunctatis ; antennis tarsisque piceo-ferrugineis, femoribus tibiisque nigro-piceis. Subtus ad latera ipsis-

sima grosse punctatum, sed in regione mediâ (depressâ) fere impunctatum.

Long. corp. lin. 2.

Habitat ins. Malayenses,—in Nov. Guinea, Borneo, et Ceram a Dom. Wallace repertum. Coll. Pascoe.

Phlœophagosoma glaberrimum, n. sp.

P. præcedenti simile, sed paululum majus, etiam depressius (sc. valde deplanatum), etiam magis politum, et fere omnino impunctatum; rostro paululum longiore; prothorace ad basin fere immarginato, necnon in medio obtusius producto; elytris magis parallelis, multo levius ac magis tenuiter subcrenulato-striatis; antennis pedibusque longioribus, scapo præcipue longiore, capituloque majore ac magis obscuro.

Long. corp. lin. 2.

Habitat ins. Java, a Dom. Wallace lectum. Communicatum a Dom. Pascoe.

Phlœophagosoma rotundicolle, n. sp.

P. subparallelo-fusiforme, minus depressum, nitidum, politum, atrum; rostro et capite ut in *P. sinuaticolle* sed paululum distinctius (tamen subtilissime) punctulatis; prothorace convexiore, antice profundius constricto, et ubique paululum evidentius (tamen minutissime ac levissime) punctulato, ad latera magis et subæqualiter rotundato, postice recte truncato (nec sinuato); elytris longioribus, profunde substriato-punctatis; antennarum capitulo obscuriore, tarsorumque art.° 3^{tio} evidenter bilobo. Subtus dense et levissime punctulatum.

Long. corp. lin. $2\frac{1}{3}$.

Habitat ins. Malayenses, in Amboyna a Dom. Wallace deprehensum. Coll. Pascoe.

Phlœophagosoma fusirostre, n. sp.

P. fusiforme, depressiusculum, subnitidum, nigrum; rostro longiusculo, arcuato, supra in medio convexo aut gibboso et ibidem gradatim subampliato (quare antice subattenuato), dense punctato; capite parvo, angusto, etiam densius et grosse punctato, oculis magnis sed subdemissis; prothorace (elytris angustiore) ovato-triangulari, antice leviter constricto, dense et profunde punctato;

elytris subparallelis (a basi paulatim vix subattenuatis), profunde et grosse punctato-sulcatis, interstitiis convexis, transversim rugulosis ac minutissime parcissimeque punctulatis; antennis rufo-piceis, scapo elongato, capitulo magno et sub-obscuriore; pedibus longiusculis, crassis, piceis. Subtus dense, grossissime et profunde punctatum.

Long. corp. lin. $2\frac{1}{3}$.

Habitat ins. New Guinea, ad Saylee a Dom. Wallace repertum.

Phlœophagosoma vicinum, n. sp.

P. fusiforme, depressiusculum, subnitidum, nigrum; rostro elongato, gracili, arcuato, supra in medio vix subgibboso et vix subampliato, dense et minutissime punctulato; capite parvo, angusto; oculis demissis, haud latissime separatis; prothorace ovato-triangulari, antice leviter constricto, dense et profunde punctato; elytris subparallelis (a basi paulatim vix subattenuatis), profunde punctato-striatis, interstitiis transversim rugulosis ac minutissime parcissimeque sub-uniseriatim punctulatis; antennis clare rufo-ferrugineis, scapo elongato, capitulo magno; pedibus piceis, subtus profunde, dense, et grosse punctatum.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Borneo; ad Sarawak collegit Dom. Wallace. Ad describendum misit Dom. Pascoe.

(*Obs.—P. fusirostri* affine sed multo minus, ac multo minus grosse sculpturatum; rostro sublongiore, multo graciliore, necnon in medio minus gibboso minusque ampliato, antennis clarioribus, pedibusque, præsertim tarsis, brevioribus.)

Phlœophagosoma angustulum, n. sp.

P. parallelo-subfusiforme, angustulum, convexiusculum, nitidum, nigrum; rostro breviusculo, arcuato, robusto, supra in medio obsolete subgibboso, subtilissime levissimeque punctulato; capite angustulo, oculis magnis, prominulis; prothorace (elytris subangustiore) triangulari-ovato, antice leviter constricto, ad latera valde rotundato, distincte et argute (tamen sat minute) punctato; scutello magno; elytris subparallelis, profunde striato-punctatis; antennis pedibusque breviusculis, crassiusculis, rufo-piceis; tarsorum art.° 3^{tio} evidenter sed minute bilobo. Subtus parce

et profunde punctatum, punctis in regione centrali minoribus ac levioribus.

Long. corp. lin. $1\frac{2}{3}$.

Habitat ins. Malayenses, in Batchian a Dom. Wallace inventum. Coll. Pascoe.

Phlœophagosoma opaculum, n. sp.

P. fusiformi-parallelum, angustulum, elongatum, subdepressum, subopacum, piceo-nigrum; rostro longiusculo, subarcuato, robusto, supra haud gibboso, minute sed argute punctulato; capite minus angusto, oculis prominulis; prothorace (pone medium latitudine elytrorum) elongato, subtriangulari, antice profunde et longe constricto, ad basin fere immarginato, distincte et argute sed haud dense punctulato; elytris parallelis, vix picescentioribus, profunde punctato-striatis; antennis pedibusque breviusculis, crassiusculis, rufo-piceis; tarsorum art°. 3^tio^ sensim sed minute bilobo. Subtus alutaceum, in medio parce et levissime sed ad latera ipsissima declivia sat grosse punctulatum.

Long. corp. lin. 2.

Habitat ins. Malayenses, a Dom. Wallace in Batchian lectum. Coll. Pascoe.

(*Species hujus generis magis typicæ.*)

Phlœophagosoma morio, n. sp.?

P. fusiforme, convexiusculum, nitidum, atrum; rostro elongato, arcuato, subparallelo, supra in medio obsolete convexo aut subgibboso, distincte punctulato; oculis subprominulis; prothorace (pone medium latitudine elytrorum) elongato, ovato-triangulari, antice leviter constricto, paulo profundius sed in disco vix dense punctulato; elytris fusiformibus basi truncatis (i. e. a basi gradatim sensim attenuatis), profunde et grosse punctato-sulcatis, interstitiis convexis ac minutissime parcissimeque punctulatis; antennis pedibusque piceis. Subtus argute sed parce punctatum.

Long. corp. lin. $2\frac{1}{2}$.

cf. Phlœophagus cossonoides, Mots., Bull. Mosc. ii. 531 (1863).

Habitat ins. Ceylon, a Dom. Fry communicatum.

Phlœophagosoma atratum, n. sp.?

P. præcedenti simile, sed minus, vix magis cylindricum, paulo minus nitidum, et ubique subdensius sculpturatum;

rostro sub-breviore, sensim minus arcuato, ac magis parallelo (nec in medio etiam obsolete subgibboso); fronte integrâ (vix foveolatâ); oculisque paulo magis prominentibus.

Long. corp. lin. 2.

cf. Phlœophagus linearis, Mots., Bull. Mosc. ii. 531 (1863).

Habitat ins. Ceylon, a Dom. E. W. Janson communicatum.

Phlœophagosoma corvinum, n. sp.

P. parallelo-fusiforme, angustulum, subcylindricum, convexiusculum, nitidum, atrum; rostro longiusculo, parallelo, minute et parce punctulato; oculis parvis, prominulis; prothorace (pone medium latitudine elytrorum) triangulari-ovato, antice leviter constricto, paulo profundius tamen leviter punctulato; elytris subcylindricis, punctato-, aut fere subcrenato-striatis, interstitiis subconvexis, subrugulosis ac minutissime (vix perspicue), parcissimeque punctulatis; antennis subgracilibus, rufo-piceis, capitulo sub-obscuriore; pedibus subgracilibus, piceis. Subtus remote et leviter punctulatum.

Var. β (*affine*). — Elytrorum interstitiis vix perspicue punctulatis, striis postice sublevius impressis.

Long. corp. lin. $2\frac{1}{3}$.

Habitat Novam Zealandiam, a DD. Fry et Janson communicatum.

(*Obs.*—Species *P. morio*, in ins. Ceylon degenti, valde affinis, sed magis parallelum, aut minus fusiforme, prothorace paululum minus elongato minusque conico, sc. pone medium evidenter magis rotundato; elytris magis parallelis, ad apicem ipsissimum magis integris, minus profunde, præsertim postice, striatis, interstitiis minus convexis minutiusque punctulatis; pedibusque sensim minus incrassatis.)

Phlœophagosoma puncticolle, n. sp.

P. fusiforme, angustulum, convexiusculum, subnitidum, nigrum; rostro longiusculo, antice lato, postice paululum angustiore, dense et profunde punctato; oculis magnis, prominentibus; prothorace (elytris subangustiore) triangulari-ovato, antice sat profunde constricto, dense et grosse punctato; elytris (a basi usque ad apicem gradatim attenuatis) profunde striato-punctatis, interstitiis minutissime et parce punctulatis; antennis pedibusque elongatis,

crassiusculis, paulo picescentioribus; tarsis elongatis, art.° 3^tio^ sensim (tamen minute) bilobo. Subtus profunde et parce punctatum.

Long. corp. lin. $2\frac{1}{2}$.

Habitat peninsulam Malayensem, a Malacca a Dom. Fry communicatum.

(*Obs.*—Species corpore majore, fusiformi, profundius sculpturato, rostro postice obsolete angustato, oculis magnis prominentibus tarsorumque art.° 3^tio^ paulo evidentius subbilobo cum gen. *Notiosomus* aliquo modo congruens, et forsan, una cum *P. proximo*, ad hoc genus vix omnino pertinens.)

Phlœophagosoma proximum, n. sp.

P. præcedenti valde affinis, sed subminus ac magis parallelum, capite rostroque subangustioribus et paulo minus profunde punctatis, prothorace sensim minore ac vix minus grosse punctato, elytris magis parallelis (sc. minus regulariter attenuatis), pedibusque subgracilioribus.

Long. corp. lin. $2\frac{1}{3}$.

Habitat ins. Malayenses, in Makian a Dom. Wallace repertum. Coll. Pascoe.

Genus 54. Melarhinus.

Wollaston (*vide, ante, p.* 466).

Melarhinus nigritus, n. sp.

M. parallelo-fusiformis, opacus, niger sed hinc inde fusco-cinereo lutosus; capite prothoraceque profunde densissimeque punctatis, hôc in medio obsolete carinulato, et pone apicem valde profunde constricto; elytris sat grosse substriato-punctatis, interstitiis planiusculis et densissime punctulatis, (oculo fortissime armato) minutissime parce sericato-pubescentibus; antennis pedibusque crassis, his tarsisque piceis.

Long. corp. lin. $2\frac{1}{2}$.

Habitat ins. Madagascar, a Dom. Pascoe communicatus.

Genus 55. Psilosomus.

Wollaston (*vide, ante, p.* 466).

Psilosomus opacus, n. sp.

P. fusiformis, depressiusculus, opacus, niger, ubique densissime punctatus, sed calvus; prothorace magno,

elongato, oblongo antice et præsertim postice truncato, profundius argutiusque punctato, ad basin anguste marginato; elytris grosse sulcato-lineatis (sulcis latis, necnon in fundo obsolete subpunctatis), interstitiis latis costiformibus ac minute denseque punctulatis; antennis longiusculis, picescentioribus, pedibus crassiusculis, validis. Subtus calvus, vix profunde et vix dense punctatus.

Long. corp. lin. $2\frac{1}{3}$—$2\frac{1}{2}$.

cf. Cossonus hebes, Walk., Ann. Nat. Hist. iv. 218 (1859).

Habitat ins. Ceylon, necnon peninsulam Malayensem (in Malacca et Paulo Penang),—a DD. E. W. Janson, G. Lewis et A. Fry benigne communicatus.

Genus 58. Lipancylus.

Wollaston (*vide, ante, p.* 468).

Lipancylus inarmatus, n. sp.

A. angustulus, subcylindricus, depressiusculus, nitidiusculus, (nisi oculo fortissime armato) calvus; capite prothoraceque minute, dense et argute punctulatis, rostro (elongato, gracillimo, cylindrico) paulo minutius punctulato et subpicescentiore, oculis magnis, demissis; prothorace elongato-subquadrato, antice haud constricto, ad basin sub-biarcuatim truncato; elytris parallelis, apice singulatim rotundatis, versus humeros subpicescentioribus, profunde crenulato-striatis, interstitiis latis et vix punctatis; antennis gracilibus, piceo-ferrugineis; pedibus crassis, tarsis latis et picescentibus. Subtus nitidus, grosse sed parce punctatus, punctis posticis minoribus.

Long. corp. lin. 4.

Habitat Americam australem, in regionibus juxta Amazon degens.

Genus 60. Homaloxenus.

Wollaston (*vide, ante, p.* 469).

Homaloxenus dentipes, n. sp.

H. parallelo-oblongus, latiusculus, valde depressus, subopacus, minute parceque subcinereo-sericatus, rufo-ferrugineus; capite parvo, minute et dense punctulato, oculis maximis sed demissis; rostro (longissimo, gracillimo, parallelo, recto) in medio carinulato sed utrinque grosse longitudinaliter strigoso; prothorace (elytris angustiore)

quadrato-ovali, antice leviter constricto et ibidem in medio tenuiter carinulato, per totum discum latissime depresso, grosse sed vix profunde punctato punctulisque minoribus interjectis adsperso; elytris parallelis, profunde subpunctato-striatis, interstitiis latis, dense transversim rugulosis ac minutissime et crebre punctulatis; antennis pedibusque elongatis, clarioribus, illis gracilibus, his crassis; femoribus subtus uni-denticulatis. Subtus subopacus, densissime minutissimeque punctulatus, et brevissime subtiliter fulvo-sericatus.

Long. corp. lin. $2\frac{1}{4}$.

Habitat ins. Americæ centralis, in San Domingo captus. A Dom. J. Gray benigne donatus.

Genus 62. Eucoptus.

Wollaston (*vide, ante, p.* 470).

Eucoptus depressus, n. sp.

E. angustus, parallelus, depressus, subopacus, piceus, nisi oculo fortissime armato calvus (sed vere subtilissime parcissimeque sericatus); rostro rufo-ferrugineo, in ♀ elongato gracillimo et minute punctato, sed in ♂ breviore robustiore et subrugosius sculpturato; capite (nigrescente) prothoraceque multo profundius punctatis, hôc elongato, subovato-triangulari, in medio lineâ læviore instructo, mox pone apicem profunde constricto; elytris pallide rufo-castaneis, tenuiter striatis, striis fere simplicibus (vix subpunctatis), interstitiis transversim reticulatis; antennis pedibusque pallide rufo-ferrugineis. Subtus subopacus, alutaceus, argute sed parce punctatus.

Long. corp. lin. 1—$1\frac{1}{2}$.

Habitat Americam australem (in regionibus juxta Amazon necnon in provinciâ Rio de Janeiro, Braziliæ, degens). Coll. Fry et Pascoe.

Genus 67. Megalocorynus.

Wollaston (*vide, ante, p.* 473).

Megalocorynus capitatus, n. sp.

M. parallelus, valde depressus, nitidus, niger; capite inter oculos rotundatos profunde et dense punctato; rostro (in ♀ breviusculo, angustulo, depresso) minutissime parceque punctulato; prothorace (brevi, ad latera subæqualiter rotundato) grossius ac parum dense subæqualiter punctato, in carinulâ mediâ obsoletâ (postice magis elevatâ)

lævore, postice in medio leviter impresso, punctis in impressione (juxta carinulam) subdensioribus ac submajoribus; elytris grosse punctato-sulcatis, punctis maximis et interstitiis elevatis costiformibus; antennis tarsisque piceis, illarum capitulo longissimo nigrescentiore et densissime velutino. Subtus nitidissimus, profunde et parum dense punctatus.

Mas adhuc latet.

Long. corp. lin. circa 3.

Habitat Americam borealem, a Mexico missus. Coll. Janson.

(*Obs.* — Species *Cossono conicirostri*, Bohm., i. e. *C. depressi* ♀, valde affinis, et forsan ejus status topographicus. Differt solum, ut mihi videtur, rostro paululum breviore et inter oculos subminus grosse punctato, prothoraceque ad latera sensim minus rotundato, postice in medio minus profunde longitudinaliter impresso, necnon punctis magnis juxta carinulam minoribus ac minus densis.)

Genus 68. CATOLETHRUS.

Schönherr, Gen. et Spec. Curc. iv. 1077 (1838).

a. *Metasternum valde elongatum.*

Catolethrus lævisculus, n. sp.

C. angustus, parallelo-fusiformis, subdepressus, nitidus, piceus; rostro minutissime et leviter punctulato; prothorace ovato-triangulari, profundius (sed haud grosse) parceque punctato, in lineâ mediâ lævore; scutello magno, depresso; elytris sat leviter striato-punctatis, interstitiis latis depressis ac minutissime parceque punctulatis; antennis pedibusque rufescentioribus. Subtus minute, parce, et leviter punctulatus.

Long. corp. lin. $2\frac{3}{4}$.

Habitat Americam australem (in provinciâ Rio de Janeiro, Braziliæ, a Dom. Fry deprehensus).

Catolethrus Grayii, n. sp.

C. angustus, parallelo-fusiformis, subdepressus, subnitidus, piceo-castaneus elytris sensim pallidioribus; rostro distinctius punctulato; prothorace subovali, ad latera subæqualiter rotundato, profunde, rugose et parum dense punctato, postice in medio late longitudinaliter subimpresso; elytris profunde, rugose et dense striato-punctatis, interstitiis convexis, transversim rugulosis ac mi-

nutissime parceque punctulatis; antennis pedibusque subconcoloribus. Subtus alutaceus, parce sed argute et parum grosse punctatus.

Long. corp. lin. $2\frac{2}{3}$.

Habitat Americam australem (ad Petropolis in provinciâ Rio de Janeiro Braziliæ), a Dom. J. Gray captus, cujus in honorem nomen triviale proposui.

Catolethrus productus, n. sp.

C. angustissimus, elongatus, parallelus, valde depressus, nitidus, piceus; rostro elongato, minute et parce punctulato; prothorace elongato, ovato-triangulari, profunde et grosse sed vix dense punctato, in lineâ (aut carinulâ) mediâ læviore; scutello magno, depresso; elytris (vix rufescentioribus) elongatis, parallelis, subtenuiter striato-punctatis, interstitiis latiusculis depressis ac minutissime parcissimeque punctulatis; antennis pedibusque breviusculis, clare rufo-piceis.

Long. corp. lin. $2\frac{1}{2}$.

Habitat Americam australem (in provinciâ Ste Catharinæ, Braziliæ, a Dom. Fry lectus).

b. *Metasternum paulo minus elongatum.*

Catolethrus parvus, n. sp.

C. angustus, parallelo-fusiformis, depressus, nitidus, piceus sed in elytris rufo-castaneus; rostro minute punctulato; prothorace ovato-triangulari, profunde et grosse sed vix dense punctato, ante medium obsoletissime subcarinulato; elytris profunde striato-punctatis, interstitiis subdepressis, subrugulosis ac minutissime parcissimeque punctulatis; antennis pedibusque clare rufo-piceis. Subtus alutaceus, parce et sat grosse punctatus.

Long. corp. lin. $1\frac{1}{3}$.

Habitat Americam australem (a provinciâ Bahia, Braziliæ, a Dom. Fry communicatus).

Catolethrus basalis, n. sp.

C. angustulus, parallelo-fusiformis, depressus, nitidus, picco-niger; rostro (a capite etiam distinctius diviso, necnon ad basin evidentius incrassato) gracili, picco, minute punctulato, postice tenuiter canaliculato; prothorace (elytris conspicue angustiore) profunde, rugose et parum dense punctato, in medio obsoletissime carinulato; elytris profunde et grosse striato-punctatis, interstitiis

transversim rugulosis ac minutissime parceque punctulatis; antennis pedibusque rufo-piceis, scapo et funiculi art.° 1mo clarioribus. Subtus profunde et parum dense punctatus.

Long. corp. lin. 2.

Habitat Americam australem (in provinciâ S^tæ^ Catharinæ, Braziliæ, a Dom. Fry deprehensus).

Genus 69. Stenotribus.

Wollaston (*vide, ante, p.* 474).

Stenotribus longicollis, n. sp.

S. angustissimus, elongatus, parallelus, nitidus, fere niger; rostro (elongato, parallelo) minutissime parcissimeque punctulato; prothorace valde elongato, triangulari-cylindrico, subdepresso, profunde et grosse sed vix densissime punctato, æquali (nec carinulato, nec impresso); elytris parallelis, sat tenuiter punctato-striatis, versus humeros rufescentioribus, interstitiis transversim subrugulosis ac minutissime (vix perspicue) parcissimeque uniseriatim punctulatis; antennis rufo-piceis, pedibus piceis. Subtus parce sed argute punctulatus.

Long. corp. lin. 1½.

Habitat Americam australem (a Dom. Fry a provinciâ Bahia, Braziliæ, communicatus).

Genus 72. Glœodema.

Wollaston (*vide, ante, p.* 476).

Glœodema spatula, n. sp.

G. angustula, elongata, fusiformis, convexa, nitidissima, nigra sed in prothorace femoribusque rufa; capite rostroque elongatis, minute (in illo parce sed in hôc dense) punctulatis, illo elongato spatuliformi (sc. antice rotundato-ampliato); prothorace (elytris paulo angustiore, et subtus concavo) postice subovali, convexo, antice subito et profunde constricto, æquali ac fere impunctato (punctulis solum minutissimis parce adsperso), rufo sed antice et postice nigro-marginato; elytris fusiformibus basi truncatis, obsolete striato-punctatis, striâ juxta suturam paulo distinctiore atque omnibus ad apicem profundis; antennis pedibusque elongatis, crassis, illis, tibiis tarsisque nigro-piceis, femoribus (basi apiceque exceptis) rufis. Subtus politissimus, fere impunctatus, ac postice castaneus.

Long. corp. lin. 5.

Habitat Nov. Guinea, ad Dorey a Dom. Wallace deprehensa. Coll. Pascoe.

Glœodema ruficollis, n. sp.

G. præcedenti similis, ac forsan ejus sexus alter. Differt corpore minore, rostro minus elongato et multo magis parallelo (sc. antice paululum solum latiore), prothorace subtus vix (aut obsolete solum) concavo, elytris paulo magis evidenter (tamen leviter) punctato-striatis.

Long. corp. lin. $3\frac{1}{2}$.

Habitat Nov. Guinea, a Dom. Wallace ad Saylee reperta. Coll. Pascoe.

Genus 73. Glœoxenus.

Wollaston (*vide, ante, p.* 477).

Glœoxenus armatus, n. sp.

G. angustulus, elongatus, fusiformis, convexus, nitidissimus, ater; capite prothoraceque minutissime parceque punctulatis (rostro breviusculo, lato, parallelo, depressiusculo), hôc elongato, cylindrico-ovato, antice sat profunde constricto; elytris (a basi usque ad apicem gradatim attenuatis) levissime substriato-punctatis, interstitiis minutissime (vix perspicue) sub-uniseriatim punctulatis; antennis pedibusque crassis, vix picescentioribus, illarum capitulo dense subfulvo-pubescenti. Subtus nitidus, et fere impunctatus.

Long. corp. lin. $2\frac{1}{3}$.

Habitat Madagascar, a Dom. J. Gray benigne donatus.

Genus 74. Exonotus.

Wollaston (*vide, ante, p.* 477).

Exonotus basalis, n. sp.

E. angustus, elongatus, fere parallelus, cylindricus, nitidus, niger sed elytris antice rufis; capite rostroque latis (latitudine subæqualibus), subconvexis, minute sed (præsertim in hôc) dense punctulatis; prothorace (elongato, triangulari-ovato, antice valde constricto) convexo, æquali, minute sed paulo parcius punctulato, ad basin distincte sed anguste marginato; elytris parallelis, sat profunde crenato- (vix punctato-) striatis, interstitiis minutissime parcissimeque punctulatis; antennis pedibusque incrassatis, subpicescentioribus. Subtus nitidus, castaneus, et fere impunctatus.

Mas (?), paulo major, rostro sublatiore necnon antice sensim dilatato.

Fœm. (?), paulo minor, rostro subangustiore necnon omnino parallelo.

Long. corp. lin. $3\frac{1}{2}$—4.

Habitat ins. Malayenses, in Tondano et Celebes, a Dom. Wallace captus. Coll. Pascoe.

Genus 75. Pseudocossonus.

Wollaston, *Trans. Ent. Soc. Lond.* 27 (1873).

Pseudocossonus dimidiatus, n. sp.

P. angustulus, elongatus, subfusiformi-parallelus, depressiusculus, nitidus, niger sed elytris in parte anticâ gradatim rufis; capite, rostro prothoraceque minutissime parceque punctulatis, rostro longiusculo, subgracili, arcuato et fere parallelo (solum ad antennarum insertionem obsolete facillimeque subampliato), oculis magnis, prominentibus; prothorace (elytris vix angustiore) sub-triangulari-ovali, antice subito et valde constricto, æquali; elytris fere parallelis, sat profunde punctato-striatis, interstitiis latis depressis et vix perspicue punctulatis; antennis pedibusque (brevibus) picescentioribus. Subtus læte rufo-castaneus, nitidissimus, et fere impunctatus.

Long. corp. lin. 3.

Habitat Nov. Guinea, ad Dorey a Dom. Wallace captus. Coll. Pascoe.

Genus 76. Catolethromorphus.

Wollaston (*vide, ante, p.* 479).

Catolethromorphus nigripes, n. sp.

C. angustus, parallelus, subdepressus, nitidus, brunneo-piceus elytris pallidioribus (sc. rufo-castaneis); capite et rostro (longiusculo, robusto, parallelo) minutissime punctulatis, oculis magnis rotundatis et sat prominentibus; prothorace breviusculo, subovali-quadrato, antice et postice truncato, mox intra apicem constricto, æquali (nec carinulato, nec impresso); elytris sat leviter striato-punctatis, interstitiis latis depressis ac minutissime parcissimeque uniseriatim punctulatis, ad apicem ipsissimum subrecte truncatis; antennis pedibusque nigrescentibus, scapo (longiusculo) rufescentiore. Subtus nitidissimus, parce et minute punctulatus.

Long. corp. lin. vix $2\frac{2}{3}$.

Habitat Indiam orientalem, a Dom. Fry communicatus.

Genus 77. Brachychœnus.

Wollaston (*vide, ante, p.* 479).

Brachychœnus pallidulus, n. sp.

B. angustulus, parallelus, depressiusculus, nitidus, clare rufo-ferrugineus; capite nigrescentiore, parce punctato, rostro (parallelo, robusto) minutissime parce punctulato; prothorace (triangulari-ovato, antice leviter constricto) æquali, sat grosse sed haud dense punctato; elytris parallelis, profunde punctato-striatis, interstiis minutissime (vix perspicue) parcissimeque uniseriatim punctulatis; antennis pedibusque crassiusculis, concoloribus, funiculo vix obscuriore. Subtus sat profunde sed haud dense punctatus.

Long. corp. lin. $1\frac{1}{2}$.

Habitat ins. Borneo, prope Sarawak a Dom. Wallace lectus.

Genus 78. Stenomimus.

Wollaston (*vide, ante, p.* 480).

Stenomimus Fryi, n. sp.

S. angustus, fusiformi-parallelus, convexiusculus, nitidulus, rufo-testaceus; rostro (longiusculo, subgracili, parallelo) cylindrico, distincte sed parce punctato, oculis magnis, subrotundatis, valde prominentibus; prothorace elongato, ovato-triangulari, antice profunde constricto, parum profunde et parum dense punctato, postice in medio obsolete longitudinaliter impresso; elytris parallelis, minutissime parcissimeque sericatis, ad apicem ipsissimum obsolete obscurioribus, tenuiter suberenulato-striatis, interstitiis depressiusculis ac minutissime (vix perspicue) parcissimeque uniseriatim punctulatis; antennis pedibusque brevibus, concoloribus. Subtus parcissime et levissime punctatus.

Long. corp. lin. 1—$1\frac{1}{4}$.

Habitat Americam australem,—in provinciâ Rio de Janeiro, Braziliæ, repertus a Dom. Fry, cujus in honorem, ob gratias mihi amicissime oblatas, nomen triviale stabilivi.

Genus 79. Micromimus.

Wollaston (*vide, ante, p.* 480).

Micromimus Batesii, n. sp.

M. angustulus, parallelo-fusiformis, depressiusculus, nitidus, subpicescenti-rufotestaceus; rostro (brevi, lato,

subparallelo) supra depressiusculo, distincte sed parce punctato, oculis maximis sed demissis; prothorace elongato, triangulari-ovato, antice leviter constricto, profunde et grosse sed parce punctato, in medio obsolete longitudinaliter impresso; elytris parallelis, profunde punctato- (aut fere subcrenato-) striatis, interstitiis convexis subcostiformibus ac minutissime (vix perspicue) parcissimeque uniseriatim punctulatis; antennis pedibusque brevibus, concoloribus. Subtus grosse et profunde sed haud dense punctatus.

Long. corp. lin. $1\frac{1}{3}$.

Habitat Americam australem,—in regionibus circa Amazon lectus a Dom. Bates, cujus in honorem nomen specificum proposui.

Micromimus pumilio, n. sp.

M. præcedenti similis sed paulo minor, subpallidior, et vix minus grosse sculpturatus; oculis minoribus (tamen magnis); elytrisque sensim minus parallelis, interstitiis paulo minus costiformibus aut convexis. Subtus depressiusculus, nitidus, parcissime et levissime punctatus.

Long. corp. lin. 1—$1\frac{1}{4}$.

Habitat in ins. Americæ centralis, in Trinidad repertus. (Coll. Fry.)

Micromimus nigrescens, n. sp.

M. parallelo-fusiformis, depressiusculus, nitidus, piceo-niger aut nigro-piceus; rostro (brevi, lato, subparallelo) minutissime parceque punctulato, præsertim antice rufescentiore, oculis maximis sed demissis; prothorace triangulari-ovato, antice leviter constricto, profunde et grossissime sed parce punctato, in medio late et distincte longitudinaliter impresso; elytris parallelis, profunde punctato- (aut fere crenato-) striatis, interstitiis convexis et conspicue costiformibus sed vix perspicue uniseriatim punctulatis; antennis pedibusque brevibus, piceo-ferrugineis. Subtus grosse, sed leviter et parce, punctatus.

Long. corp. lin. $1\frac{1}{2}$.

Habitat Americam borealem, in Mexico degens. (Coll. Fry.)

Genus 80. Glœotrogus.

Wollaston (*vide, ante, p.* 481).

Glœotrogus politissimus, n. sp.

G. angustulus, parallelus, valde deplanatus, politissimus;

capite prothoraceque fere impunctatis (punctulis solum subtilissimis levissimis parce adspersis), illo elongato-quadrato, angustulo, valde exserto, depresso, nigro, rostro (brevi, lato, subparallelo) picescentiore; prothorace triangulari-quadrato, basi subrecte truncato, apice haud constricto, æquali, rufo-piceo; elytris subpellucide testaceis, sed in limbo et versus scutellum gradatim suffuse picescentioribus, versus latera obsoletissime, levissime et tenuiter sublineato-punctulatis, sed versus suturam fere omnino esculpturatis; antennarum scapo clare et pallide rufo-ferrugineo, funiculo piceo, capitulo paulo nigrescentiore; pedibus brevibus, politissimis, piceis. Subtus deplanatus, politissimus, haud sculpturatus.

Long. corp. lin. $1\frac{1}{2}$.

Habitat ins. Malayenses, in Morty et Gilolo a Dom. Wallace detectus. (Coll. Pascoe et Janson.)

Genus 81. Homalotrogus.

Wollaston (*vide, ante, p.* 482).

Homalotrogus angustifrons, n. sp.

H. angustulus, parallelus, valde deplanatus, nitidus; capite elongato, angusto, ovali, valde exserto, fere nigro, rostro picescentiore et una cum illo minute parceque punctulato; prothorace subquadrato, basi subrecte truncato, apice breviter constricto, æquali, piceo, subalutaceo punctulisque minutissimis levissimis parcissime adsperso; elytris subpellucide testaceis, sed in limbo gradatim suffuse subpicescentioribus, levissime lineato-punctatis; antennarum scapo clare rufo-ferrugineo, funiculo piceo, capitulo paulo nigrescentiore; pedibus rufo-piceis. Subtus depressus, politus, fere esculpturatus (punctulis solum minutissimis levissimis parcissime irroratus).

Long. corp. lin. $1\frac{2}{3}$—2.

Habitat ins. Malayenses, a Dom. Wallace in Ceram et Batchian deprehensus. (Coll. Pascoe.)

Genus 82. Isotrogus.

Wollaston (*vide, ante, p.* 483).

Isotrogus tabellatus, n. sp.

S. angustulus, parallelus, valde deplanatus, nitidus; capite elongato, ovali, valde exserto, nigro, rostro (subparallelo) ad apicem picescentiore et una cum illo minutissime parcissimeque punctulato; prothorace elongato,

triangulari-oblongo, basi sensim trisinuato, apice breviter constricto, postice in medio obsoletissime subcarinulato, punctis perpaucis maximis notato; elytris (interdum obsolete) subpellucide testaceis, sed in limbo et suturâ conspicue suffuse nigrescentibus, distincte striato-punctatis; antennarum scapo rufo-ferrugineo, funiculo capituloque paulo obscurioribus; pedibus piceis. Subtus politus, fere esculpturatus (punctulis solum minutissimis levissimis parcissime irroratus).

Long. corp. lin. $1\frac{2}{3}$—2.

Habitat ins. Malayenses, a Dom. Wallace in Batchian captus.

Isotrogus maurus, n. sp.

S. angustulus, parallelus, minus depressus, nitidus, niger; capite paulo crassiore, paulo minus exserto, minute foveolato, et una cum rostro (subparallelo) minutissime parcissimeque punctulato; prothorace elongato, triangulari-oblongo, basi conspicue trisinuato, apice constricto, postice in medio leviter depresso, punctis perpaucis maximis ubique (in fundo impressionis densius bilineatim) notato; elytris vel concoloribus vel interdum in disco singuli obsoletissime subtestaceo-tinctis, profunde punctato-striatis; antennis picescentioribus.

Long. corp. lin. $2\frac{1}{2}$.

Habitat ins. Malayenses, in Batchian a Dom. Wallace lectus.

Genus 83. Heterophasis.

Wollaston (*vide, ante, p.* 483).

Heterophasis ruficollis, n. sp.

H. parallelo-fusiformis, valde depressus, nitidus; capite fere nigro, profunde foveolato, rostro gradatim rufo-ferrugineo et, una cum illo, minutissime parcissimeque punctulato; prothorace (elytris distincte angustiore) ovali-subquadrato, basi evidenter trisinuato, apice profunde constricto, clare testaceo-rufo, æquali, fere impunctato,—solum punctis perpaucis magnis, in seriebus duabus dorsalibus necnon in fundo strictura positis, notato; elytris subfusiformibus basi truncatis, sat grosse substriato-punctatis (sc. striis obsoletis, sed punctis magnis); antennis pedibusque longiusculis, illis rufo-ferrugineis, capitulo obscuriore, his clare testaceo-rufis. Subtus in medio late

deplanatus, politus, impunctatus, tamen ad latera declivia ipsissima grosse sed subleviter punctatus.

Long. corp. lin. 2—2½.

Habitat Nov. Guinea, ad Dorey a Dom. Wallace deprehensus.

Heterophasis concolor, n. sp.

H. parallelo-fusiformis, valde depressus, nitidus, ater; capite obsolete foveolato, rostro apicem versus minus dilatato et, una cum illo, minutissime parcissimeque punctulato; prothorace (elytris vix angustiore) ovali-subquadrato, basi evidenter trisinuato, apice sat profunde constricto, æquali, parce et levissime punctulato et punctis perpaucis vix majoribus, in seriebus duabus dorsalibus necnon in fundo strictura positis, notato; elytris subfusiformibus basi truncatis, punctulato-striatis (striis sat profundis, sed punctis parvis); antennis (elongatis) tarsisque rufo-ferrugineis, capitulo obscuriore, femoribus tibiisque nigro-piceis.

Long. corp. lin. 2.

Habitat ins. Nov. Guinea, ad Dorey a Dom. Wallace captus. Coll. Pascoe.

(*Obs.*—A *H. ruficolli* præcipue differt corpore nigro et etiam magis depresso, rostro apice multo minus dilatato, prothorace punctulis minutissimis distinctioribus adsperso sed tamen punctis in duplici serie discali multo minoribus, sc. vix majoribus quam reliquis, necnon punctis in elytrorum striis multo minoribus.)

Genus 85. Hyponotus.

Wollaston (*vide, ante, p.* 484).

Hyponotus subpubescens, n. sp.

H. angustulus, elongatus, parallelus, vix depressus, opacus, niger, minutissime, brevissime et parce fulvo-setuloso-pubescens; capite latiusculo, et una cum rostro (lato, brevi, subparallelo, postice solum paululum contracto, necnon in medio carinulato) densissime et rugose punctato; prothorace breviter subovali (ad latera æqualiter rotundato), densissime, grossissime et æqualiter punctato, postice in medio obscure carinulato (sed haud impresso); scutello nitidiusculo; elytris (elongatis, valde parallelis) grosse substriato-punctatis, interstitiis valde distincte uniseriatim punctulatis; antennis tarsisque piceis. Subtus

nitidiusculus, densissime, profunde, et grosse æqualiter punctatus.

Long. corp. lin. circa 4.

Habitat peninsulam Malayensem, in Singapore a Dom. Wallace repertus. (Coll. Pascoe.)

Genus 86. Borophlœus.

Wollaston (*vide, ante, p.* 484).

Borophlœus puncticollis, n. sp.

B. angustulus, parallelus, depressiusculus, nitidus, ater; rostro (breviusculo, latiusculo, fere parallelo, sc. postice paululum angustiore) profunde et rugose punctato, fronte (inter oculos magnos, prominentes) foveâ subrotundatâ profundâ notatâ; prothorace subtriangulari-quadrato, antice paulo constricto, postice leviter trisinuato, profunde, grosse, parum dense et subæqualiter punctato (punctis utrinque in disco paulo minoribus), postice evidenter carinulato sed haud longitudinaliter impresso; elytris grosse punctato-sulcatis, interstitiis convexis; antennis tarsisque paulo dilutioribus. Subtus parum grosse sed in medio haud profunde punctatus.

Long. corp. lin. $2\frac{1}{3}$—$2\frac{1}{2}$.

Habitat Mexico, in coll. Dom. Fry.

Borophlœus minor, n. sp.

B. præcedenti similis, sed minor; rostro subbreviore, omnino parallelo (nec postice subangustiore), et paulo densius punctato; prothorace subdensius et vix grossius punctato; scutello minore; elytrorum interstitiis angustioribus ac evidentius (tamen minutissime) uniseriatim punctulatis; necnon antennis pedibusque subbrevioribus, magis pubescentibus, illarum capitulo minus incrassato.

Long. corp. lin. circa 2.

Habitat Americam borealem, in coll. Dom. Janson.

Genus 87. Pachytrogus.

Wollaston (*vide, ante, p.* 484).

Pachytrogus crassirostris, n. sp.

P. crassus, parallelus, convexus, cylindricus, nitidus, ater; capite rostroque latis, crassis, minute et parce punctulatis, hôc brevi, subtriangulari-parallelo, supra obsolete subgibboso, oculis demissis; prothorace elongato, cylin-

drico-oblongo, postice subrecte truncato, antice integro, grossissime et subæqualiter sed parce punctato, in lineâ postmediâ læviore, æquali; elytris (prothorace vix latioribus) grosse sulcato-punctatis, interstitiis fere impunctatis; antennis tarsisque picescentioribus. Subtus subalutaceus, parce et grosse sed (saltem postice) vix profunde punctatus.

Long. corp. lin. $3\frac{1}{2}$.

Habitat Americam australem, in Chili degens. Coll. Janson.

Genus 88. STEREOBORUS.

Wollaston (*vide, ante, p.* 485).

Stereoborus robustus, n. sp.

S. angustulus, subfusiformi-parallelus, nitidus, ater; capite lato et, una cum rostro (brevi, subquadrato), alutaceo, minus nitido, necnon parce minuteque punctulato, canaliculâ e foveâ minutâ profundâ frontali oblongâ surgente (interdum etiam pone hanc levius currente) et fere usque ad apicem continuatâ; oculis sat prominentibus; prothorace elongato, cylindrico-ovato, antice profunde constricto, postice trisinuato, in medio carinulato et utrinque juxta carinulam punctis maximis in lineâ valde confusâ sitis notato, ubique parcissime minute punctulato punctisque magnis versus latera atque in fundo stricturæ ac per basin ipsissimam adsperso; elytris grosse punctato-striatis; antennis pedibusque robustis, paulo picescentioribus.

Long. corp. lin. $3\frac{2}{3}$—4.

Habitat ins. Nov. Guinea, ad Dorey a Dom. Wallace (teste coll. Pascoeano) deprehensus.

Stereoborus affinis, n. sp.

S. præcedenti similis, sed minor, capite rostroque vix grossius ac vix densius punctulatis, hôc sensim minus lato, canaliculâ antice breviore (sc. longe pone apicem evanescente) atque e foveâ frontali magis rotundatâ (minus oblongâ) surgente, prothorace subminore et subgrossius punctato.

Long. corp. lin. 3—$3\frac{1}{4}$.

Habitat ins. Malayenses, a Dom. Wallace in Gilolo et Matabello repertus. Coll. Pascoe.

Stereoborus punctirostris.

S. magnitudine formâque generali *S. affini* simillimum, sed differt rostro sensim angustiore atque nitido (nec alu-

taceo), necnon densius (præsertim antice) et paulo distinctius punctato, canaliculâ subbreviore ac postice paululum magis profundâ; prothorace sensim densius grossiusque punctato.

Var. β (*obliteratus*).—Rostrum vix parcius leviusque punctatum, canaliculâ centrali levius impresso; prothorace vix minus grosse punctato.

Long. corp. lin. $3\frac{1}{4}$.

Habitat ins. Malayenses, in coll. Dom. Janson. "Var. β" (*obliteratus*), in Nov. Guinea et in Ké degentem, communicavit Dom. Pascoe.

Genus 89. Stereotribus.

Wollaston (*vide*, *ante*, *p.* 486).

a. *Rostrum breve, subquadratum.*

Stereotribus scabrifrons, n. sp.

S. angustulus, parallelus, convexiusculus, nitidus, ater; capite valde malleato-inæquali, aut quasi scabroso, parce punctato necnon antice tuberculo minuto centrali instructo; rostro (brevi, subquadrato, subtus ad apicem dense et longe fulvo-barbato) minutius densiusque punctato, necnon postice grosse et profunde sed breviter longitudinaliter fisso (lateribus fissuræ postice subelevatis, et ibidem subtuberculiformibus), oculis prominentibus; prothorace elongato, cylindrico-ovato, antice profunde constricto postice leviter trisinuato, in medio carinulato impunctato, ubique parce et profunde punctato, punctis utrinque juxta carinulam necnon ad latera, per basin, et in fundo stricturæ majoribus ac parum grossis; elytris grosse punctato-striatis; antennis pedibusque robustis, paulo picescentioribus..

Long. corp. lin. $2\frac{2}{3}$—vix 3.

Habitat ins. Malayenses, in Batchian et Banda a Dom. Wallace repertus. Coll. Pascoe.

Stereotribus fissifrons, n. sp.

S. præcedenti similis, sed paulo minor; capite æquali (nec malleato-scabroso), fissurâ centrali longiore (sc. antice magis versus apicem rostri, et postice in frontem, currente); rostro subtus ad apicem fere calvo (nec dense fulvo-barbato); prothorace paulo minore atque densius, multo grossius magisque æqualiter punctato (punctis solum utrinque in disco paulo minoribus); pedibusque sensim

minus incrassatis, tibiis anticis intus minus late lamellato-ampliatis.

Long. corp. lin. $2\frac{1}{3}$—$2\frac{2}{3}$.

Habitat ins. Malayenses, a Dom. Wallace in Tondano captus. Coll. Pascoe.

b. *Rostrum paulo longius, ac basin versus sensim angustatum. Capitulum majus ac longius.* (Subg. Stereotrogus, Woll.)

Stereotribus incisus, n. sp.

S. fissifronti parum similis, sed major, rostro (subtus ad apicem fere calvo) longiore ac postice sensim angustato, fissurâ centrali valde profundâ subtrianguliformi, postice haud in frontem currente, oculis magis (sc. valde) prominentibus; prothorace longiore, paulo magis triangulari ac profundius (sc. grossissime) punctato (punctis magnis et fere æqualibus), carinulâ mediâ (ut in illo) lævi; tibiis anticis (ut in *S. scabrifronti*) intus late lamellato-ampliatis.

Long. corp. lin. circa 3.

Habitat Ceylon, in collectione Dom. Fry.

Stereotribus tuberculifrons, n. sp.

S. scabrifronti primâ facie affinis, sed multo major et rostro (ut in *S. inciso*) longiore ac postice angustato, necnon capitulo majore; capite convexo, valde malleato-inæquali, aut quasi subscabroso, dense et profunde punctato, necnon antice tuberculis tribus (centrali subcarinuliformi) instructo; rostro (subtus ad apicem dense et longe fulvo-barbato) minutius punctulato, postice grosse et profunde, sed breviter, longitudinaliter fisso (lateribus fissuræ postice elevatis, et ibidem gradatim nodiformibus), oculis valde prominentibus; prothorace elongato, cylindrico-ovato, punctato ut in *S. scabrifronte* sed paulo grossius; elytris grosse punctato-striatis.

Long. corp. lin. $3\frac{2}{3}$—4.

Habitat Ceylon, in collectionibus DD. Fry et Janson.

Genus 90. Stereomimetes.

Wollaston (*vide, ante, p.* 486).

Stereomimetes crassicornis, n. sp.

S. angustulus, parallelus, convexiusculus, nitidus, subpiceus sed in elytris niger; capite rostroque dense punctatis (punctis in hujus medio longitudinaliter confluenti-

bus), hôc antice rotundato-ampliato, basi angustato, postice profunde et aperte canaliculato (canaliculâ a foveâ frontali rotundatâ profundâ surgente) ; prothorace elongato, suboblongo, antice profunde constricto, postice subrecte truncato, in medio carinulato impunctato, ubique profunde et sat dense punctato, punctis utrinque in disco subminoribus ; elytris grosse punctato-striatis, interstitiis minutissime sed evidenter punctulatis, ad basin subrecte truncatis ; antennis (crassissimis) pedibusque rufo-piceis. Subtus subtestaceo-piceus, argute et sat dense, sed vix valde profunde et vix grosse, punctatus.

Long. corp. lin. $3\frac{2}{3}$.

Habitat Australiam occidentalem, a "Champion Bay" missus. Ad describendum benigne communicavit Dom. Pascoe.

Genus 91. Stereoderus.

Wollaston (*vide, ante, p.* 486).

a. *Rostrum emarginatione apicali* (*pro labri receptione*) *lobo magno, in medio fisso, fere repletâ ; ergo rostrum ad apicem ipsissimum in medio quasi trifissum.*

Stereoderus barbatus, n. sp.

S. angustulus, parallelus, cylindricus, convexus, nitidus, ater ; capite lato, crasso, antice tuberculo parvo centrali instructo, et una cum rostro (brevissimo, latissimo, capite vix angustiore, et subtus ad apicem dense ac longe fulvo-barbato) minute et parce punctulato ; oculis magnis, valde anterioribus, prominentibus ; prothorace valde elongato, cylindrico-conico, antice leviter constricto, postice subrecte truncato, æquali, minute et parce punctato ; elytris breviter cylindricis obsolete substriato-punctatis, striis punctisque postice evanescentibus, interstitiis latis depressis ac subtilissime parcissimeque punctulatis ; antennis rufo-piceis, scapo clariore ; pedibus piceis.

Long. corp. lin. 3.

Habitat ins. Malayenses, in Ceram a Dom. Wallace detectus. Communicavit Dom. Pascoe.

Stereoderus simplex, n. sp.

S. præcedenti similis, sed minor, fronte in medio foveâ punctiformi notatâ (nec tuberculatâ), prothorace multo

profundius grossiusque punctato necnon antice levius constricto, elytris paulo profundius substriato-punctatis.

Long. corp. lin. 2.

Habitat ins. Malayenses, a Dom. Wallace in Batchian captus. Coll. Pascoe.

b. *Rostrum emarginatione apicali fere simplici,—sc. lobo centrali brevi, integro, obsoleto.*

Stereoderus pacificus, n. sp.

S. barbato affinis sed subangustior, valde cylindricus; tuberculo frontali magis in rostro (depressiore, alutaceo) sito, et fronte (pone illum) canaliculâ brevissimâ minutissimâ notatâ, lateribus canaliculæ obsoletissime subelevatis (quasi tuberculos duos minutissimos obsoletissimos efficientibus); emarginatione rostrali apicali fere simplici; prothorace (longissimo, subtriangulari-cylindrico) etiam minutius leviusque punctulato; necnon elytris sublongioribus et etiam obsoletius substriato-punctatis.

Long. corp. lin. vix 3.

Habitat ins. Pacificas "Fiji" dictas, a Dom. Pascoe amice communicatus.

Genus 92. Oxydema.

Wollaston (*vide, ante, p.* 487).

Oxydema fusiformis, n. sp.

O. angustula, elongata, fusiformis (antice et postice attenuata), nitida, nigra; capite rostroque (elongato) dense punctatis, punctis in illo sat magnis sed in hôc gradatim minutioribus, illo inter oculos prominentes foveâ profundâ punctiformi impresso; prothorace elongato, subovali, antice valde constricto, æquali, sat dense sed parum minute punctato; elytris a basi paulatim attenuatis, ad apicem ipsissimum obsolete singulatim subrotundatis, profunde punctato-striatis, interstitiis subconvexis et transversim rugulosis ac minutissime sub-uniseriatim punctulatis; antennis pedibusque paulo picescentioribus.

Long. corp. lin. 3—3½.

Habitat Ceylon; benigne communicavit Dom. Janson.

Oxydema attenuata, n. sp.

O. præcedenti valde similis, et forsan ejus varietas geographica; differt corpore paulo minore, subangustiore, subdepressiore, punctis in prothoracis disco antico minori-

bus ac sensim magis remotis, elytrorumque interstitiis vix perspicue punctulatis.

Long. corp. lin. vix 3.

Habitat ins. Malayenses, a Dom. Wallace ad Dorey in Nov. Guinea detecta. Communicavit Dom. Pascoe.

Oxydema puncticollis, n. sp.

O. præcedentibus paulo minor ac magis atra; capite rostroque minus nitidis ac densius grossiusque punctatis; prothorace paulo densius ac multo grossius punctato; elytris apicem versus sensim magis attenuatis, striis minus profundis (sc. sub-obsoletis) sed punctis majoribus, interstitiis magis depressis ac punctulis (minutissimis, vix perspicuis) remotioribus notatis.

Long. corp. lin. $2\frac{2}{3}$.

Habitat ins. Malayenses, in Batchian a Dom. Wallace capta. Coll. Pascoe.

Genus 93. Notiosomus.

Wollaston (*vide, ante, p.* 488).

Notiosomus major, n. sp.

N. elongatus, angustus, fusiformis, nitidiusculus, niger; capite rostroque (longiusculo) sat profunde et dense punctatis, punctis in illo sat magno sed in hôc gradatim minutioribus, illo inter oculos prominulos foveâ punctiformi impresso; prothorace (elytris paululum angustiore) elongato, subovali, convexiusculo, antice profunde constricto, æquali, profunde et dense punctato; elytris elongate fusiformibus basi truncatis, convexiusculis, profunde striato-punctatis, interstitiis minutissime (vix perspicue) subuniseriatim punctulatis; antennis tarsisque paulo picescentioribus, horum art°. 3^tio conspicue bilobo. Subtus profunde et sat grosse punctatus.

Long. corp. lin. 3.

Habitat Australiam meridionalem, ad Rockhampton lectus. Communicavit Dom. Pascoe.

Notiosomus australis, n. sp.

N. elongatus, fusiformis, nitidiusculus, piceo-niger; capite rostroque profunde punctatis, punctis in illo magnis sed in hôc gradatim minutioribus, illo inter oculos valde prominentes foveâ punctiformi impresso; prothorace (elytris conspicue angustiore) minus elongato, subovato basi truncato, convexiusculo, antice leviter constricto, æquali, pro-

funde et grosse punctato, lineâ obsoletissimâ in medio sublæviore; elytris fusiformibus basi truncatis, convexiusculis, profunde striato-punctatis, interstitiis transversim subrugulosis ac minutissime (tamen conspicue) sub-uniseriatim punctulatis; antennis pedibusque paulo picescentioribus. Subtus profunde et grosse punctatus.

Long. corp. lin. $2\frac{2}{3}$.

Habitat Australiam, in collectione Dom. Fry.

Notiosomus congener, n. sp.

N. præcedenti similis, et forsan ejus status topographicus. Differt solum (ut mihi videtur) capite prothoraceque (et forsan elytrorum striis) subremotius grossiusque punctatis, hôc lineâ centrali læviore distinctius instructo.

Long. corp. lin. $2\frac{2}{3}$.

Habitat Australiam occidentalem; communicavit Dom. Pascoe.

Genus 94. Aphanocorynes.

Wollaston (*vide*, *ante*, *p.* 488).

Aphanocorynes depressus, n. sp.

A. angustus, elongatus, parallelo-fusiformis, depressus, niger; capite rostroque (parallelo) minute sed densissime punctulatis, alutaceis, subopaeis, oculis parum prominentibus; prothorace elongato, triangulari-ovato, alutaceo, subopaco, paulo profundius ac paulo minus dense punctulato, antice profunde constricto, postice in medio late et leviter longitudinaliter impresso; elytris parallelo-fusiformibus basi truncatis, tenuiter punctulato-lineatis, interstitiis depressis transversim rugulosis ac minute parceque (tamen conspicue) punctulatis; antennis tarsisque piceis; femoribus tibiisque minus picescentibus. Subtus subalutaceus, subopaeus, grosse sed vix profunde punctatus.

Long. corp. lin. $2\frac{2}{3}$.

Habitat Australiam meridionalem, a Dom. Masters ad "King George's Sound" captus. Coll. Pascoe.

Genus 95. Orthotemnus.

Wollaston (*vide*, *ante*, *p.* 489).

Orthotemnus reflexus, n. sp.

O. angustulus, elongatus, parallelus, depressus, nitidus, niger; capite rostroque (parallelo) minute, dense, et leviter punctulatis, oculis magnis prominentibus; prothorace

elongato, triangulari, basi recte truncato et ibidem elytrorum latitudine, antice leviter constricto, æquali, vix profundius parciusque punctulato; elytris parallelis, utrinque ad apicem ipsissimum singulatim reflexis, basi rectissime truncatis, tenuiter punctato-striatis, interstitiis depressis ac minute parceque (tamen conspicue) sub-uniseriatim punctulatis; antennis pedibusque plus minus picescentibus. Subtus dense, minute et leviter punctulatus.

Long. corp. lin. $2\frac{1}{2}$—3.

Habitat ins. Malayenses, longe lateque diffusus; in Nov. Guinea, Batchian, Makian, et Ceram a Dom. Wallace deprehensus. Communicavit Dom. Pascoe.

Genus 96. Macrorhyncolus.

Wollaston, Trans. Ent. Soc. Lond. 33 (1873).

Macrorhyncolus crassitarsis, n. sp.

M. cylindrico-fusiformis, angustus, nitidus, ater; rostro longiusculo, latiusculo, subparallelo sed ad basin paulo contracto, minute et parce punctulato, oculis magnis et valde prominentibus; prothorace elongato, triangulari-cylindrico, antice valde constricto, paulo profundius (sed parum minute) punctulato; elytris (prothoracis basi vix latioribus) fusiformibus basi truncatis, profunde et grosse striato-punctatis, interstitiis minutissime (vix perspicue) sub-uniseriatim punctulatis; antennis pedibusque breviusculis, crassiusculis, nigro-piceis, illarum capitulo angusto, ferrugineo; tarsis brevibus, crassis. Subtus parce et leviter punctulatus.

Long. corp. lin. $1\frac{3}{4}$.

cf. Rhyncolus ater, Mots. [nec Linn.], Bull. Mosc. ii. 446 (1866).

Habitat Ceylon, a Dom. Fry benevole communicatus.

(*Obs.*—Species *M. crassiusculum*, insularum Japonicarum, aliquo modo simulans; sed minor, angustior, minus parallelus, subconvexior, ac minus profunde sculpturatus, rostro paulo graciliore, oculis minoribus, prothorace angustiore et magis cylindrico, antennis in medio, nec pone medium, ejus insertis, scapo breviore, tarsorumque art.° 3^{tio} magis simplici.)

Genus 97. HETERARTHRUS.

Wollaston, Trans. Ent. Soc. Lond. 29 (1873).

Heterarthrus pictus, n. sp.

H. fusiformis, convexus, subnitidus, niger vel piceo-niger; capite rostroque minute et parce punctulatis, hôc breviusculo, ad basin evidenter substrangulatim constricto; prothorace elongato, cylindrico-triangulari, antice valde constricto, vix profundius punctulato; elytris fusiformi-cylindricis, obscure rufo-testaceis, in limbo necnon in plagâ postmediâ suffusâ (per suturam antice versus scutellum angustius currente) nigrescentibus, striato-punctatis (striis versus suturam profundioribus), interstitiis depressis et minutissime parcissimeque uniseriatim punctulatis; antennis clare picco-ferrugineis, pedibus piceis.

Variat prothorace plus minus, sed præsertim utrinque postice, suffuse pallidiore.

Long. corp. lin. $1\frac{1}{2}$.

Habitat ins. Japonicas, prope Nagasaki captus. Coll. DD. Pascoe, Lewis, et Janson.

(*Obs.—H. Lewisii* et *pallidipenni*, Woll., colore formâque generali simillimus, sed subnitidior, necnon in rostro prothoracisque disco parcius minutiusque punctulatus, punctulis in elytrorum interstitiis subminoribus, prothorace antice profundius constricto, rostro ad basin paululum magis strangulatim contracto, necnon antennis vix omnino in medio, sc. forsan mox pone medium, ejus insertis.)

Genus 98. CONARTHRUS.

Wollaston (*vide, ante, p.* 491).

Conarthrus tarsalis, n. sp.

C. angustus, elongatus, cylindricus, subnitidus, niger; capite prothoraceque dense et parum minute punctulatis, illo lato subconvexo crasso valde exserto et antice foveâ punctiformi notato, rostro (vix capite angustiore) subdepresso et apicem versus gradatim paulo latiore, hôc elongato, triangulari-cylindrico, antice valde constricto, in disco postico obsoletissime late impresso; elytris parallelis, profunde subcrenulato-striatis, interstitiis subconvexis et conspicue uniseriatim punctulatis; antennis pedibusque elongatis, crassis, illis tarsisque paulo picescentioribus,

tarsorum art.° ult.^{mo} valde conico (ad basin lato). Subtus minute, leviter, et parum dense punctatus.

Long. corp. lin. $3\frac{1}{3}$.

Habitat ins. Malayenses, in Makian a Dom. Wallace repertus. Communicavit Dom. Pascoe.

Conarthrus cylindricus, n. sp.

C. præcedenti similis, sed minor, rostro breviore ac omnino parallelo, fronte minus evidenter foveolatâ, prothorace paulo magis triangulari et subdistinctius punctato necnon in medio lineâ obsoletâ lævioré instructo (in disco postico haud, etiam obsolete, impresso), elytris vix minus parallelis, striis sensim minus profundis, antennis pedibusque paulo brevioribus ac vix picescentioribus, tarsorum art.° ult.^{mo} minus incrassato.

Long. corp. lin. $2\frac{1}{2}$.

Habitat ins. Malayenses, a Dom. Wallace in Batchian lectus. In collectione Dom. Pascoe.

Conarthrus vicinus, n. sp.

C. cylindrico simillimus, sed vix ejus status geographicus. Differt tamen solum prothorace paulo minus conico, sc. ad latera (pone medium) sensim magis rotundato; elytris vix magis transversim rugulosis, ad basin distinctius marginatis; scutelloque majore et magis horizontali (vix declivi).

Long. corp. lin. $2\frac{1}{2}$.

Habitat Cochin China, in collectione Dom. Fry.

Genus 99. Eutornus.

Wollaston (*vide, ante, p.* 491).

Eutornus Jansoni, n. sp.

E. elongatus, fusiformis, nitidiusculus, niger sed in elytris (præsertim antice) sensim rufescentior, aut rufoferrugineus; capite rostroque crassiusculis et gradatim versus apicem densius punctulatis, illo antice foveâ profundâ punctiformi notato, hôc lato parallelo breviusculo; prothorace elongato, cylindrico-ovato, antice profunde constricto, profundius argutiusque dense punctato; elytris fusiformi-cylindricis, postice gradatim subattenuatis, striato-punctatis (striis versus suturam profundioribus), interstitiis depressis ac minutissime uniseriatim punctulatis; an-

tennis pedibusque crassiusculis, piceis. Subtus vix dense et in medio leviter punctatus.

Long. corp. lin. $2\frac{2}{3}$.

Habitat Ceylon, sec. coll. E. W. Janson,—cujus in honorem nomen triviale dedi.

Eutornus ferrugineus, n. sp.

E. elongatus, fusiformis, nitidiusculus, rufo-ferrugineus sed antice et postice plus minus evidenter obscurior; capite rostroque minute punctulatis et plus minus nigrescentioribus (rarius rufo-ferrugineis); prothorace elongato, cylindrico-ovato, antice profunde constricto, vix argutius punctulato; elytris fusiformi-cylindricis, postice gradatim subattenuatis, striato-punctatis (striis versus suturam profundioribus), interstitiis depressis ac minutissime uniseriatim punctulatis, postice sæpius gradatim paulo obscurioribus; antennis pedibusque crassiusculis, fere concoloribus. Subtus parcissime et levissime punctulatus.

Long. corp. lin. $2—2\frac{1}{2}$.

Habitat ins. Malayenses,—in Nov. Guinea, Morty, Tondano, Gilolo, et Makian a Dom. Wallace lectus. Communicavit Dom. Pascoe.

(*Obs.*—*E. Jansoni* affinis, sed discedens corpore minore et sensim clarius ferrugineo, antice et postice paulo minus obscurato, necnon subtus parcius leviusque punctulato; rostro prothoraceque minutius leviusque punctulatis, foveâ frontali obsoletâ, hôc antice sensim minus profunde constricto; scutello magis horizontali; pedibusque clarioribus.)

Eutornus dubius, n. sp.

E. elongatus, fusiformis, nitidus, picco-niger sed in elytris ferrugineus, capite rostroque profunde et parce punctulatis; prothorace elongato, ovato-cylindrico, antice sat profunde constricto, paulo grossius sed parce punctato; elytris subfusiformi-cylindricis basi recte truncatis, striato-punctatis (striis postice levioribus), interstitiis minutissime parcissimeque uniseriatim punctulatis; antennis pedibusque piceo-ferrugineis. Subtus subalutaceus, grosse sed parce punctatus.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Novam Zealandiam, a Dom. Lawson repertus. Benigne communicavit D. Sharp.

(*Obs.*—Species ad hoc genus forsan vix omnino pertinens. Ab *E. Jansoni* et *ferrugineo* differt corpore mi-

nore nitidiore et paulo grossius sculpturato, rostro subangustiore, prothorace elytrisque ad basin rectius truncatis, his ad apicem haud singulatim rotundatis, scapo minus curvato, tarsisque subgracilioribus, art.° 3^tio^ magis simplici.)

Genus 100. Coptus.

Wollaston (*vide, ante, p.* 492).

Coptus oculatus, n. sp.

C. angustus, parallelus, subdepressus, nitidus, rufopiceus aut fere piceo-ferrugineus; rostro (brevi, lato, parallelo, arcuato) minute punctulato, oculis maximis, valde prominentibus; prothorace ovali-cylindrico, antice leviter constricto, æquali, profundius punctato; elytris parallelis, subrufescentioribus, sat profunde punctato-striatis, interstitiis minutissime parcissimeque uniseriatim punctulatis; antennis pedibusque clarioribus. Subtus parce et parum leviter punctatus.

Long corp. lin. $1\frac{1}{3}$.

Habitat ins. Malayenses, a Dom. Wallace in Sula repertus. In collectione Dom. Pascoe.

Coptus minor, n. sp.

C. præcedenti similis, et forsan ejus varietas insularis. Differt solum corpore subminore, subpallidiore, necnon rostro prothoraceque subdensius ac sensim minus grosse punctatis.

Long. corp. lin. $1\frac{1}{4}$.

Habitat Nov. Guinea, ad Dorey et Saylee a Dom. Wallace deprehensus.

Genus 101. Pachyops.

Wollaston (*vide, ante, p.* 492).

Pachyops cylindricus, n. sp.

P. angustus, parallelus, convexiusculus, cylindricus, subnitidus, niger aut subpiceo-niger; capite (magno, lato, crasso, convexo, valde exserto) rostroque (brevi, lato) dense sed parum minute punctulatis, fronte obsoletissime et tenuiter canaliculatâ; prothorace (elongato, conico-cylindrico) dense et profundius punctato, æquali sed in lineâ mediâ obsoletâ læviore; elytris elongatis, parallelis, grosse punctato-sulcatis, interstitiis convexis, costiformibus ac minutissime uniseriatim punctulatis; antennis pedibus-

que piceis, illarum capitulo ferrugineo. Subtus sat grosse et dense, sed vix profunde, punctatus.

Long. corp. lin. 2—2$\frac{1}{3}$.

Habitat Borneo; ad Sarawak collegit Dom. Wallace. In coll. Dom. Pascoe.

Genus 102. PENTAMIMUS.

Wollaston (*vide, ante, p.* 493).

Pentamimus rhyncoliformis, n. sp.

P. cylindricus, convexus, nitidus, niger; capite prothoraceque (præsertim hôc) sat profunde punctatis, illo crasso, rostro brevissimo lato crasso, hôc elongato triangulari-cylindrico; elytris (prothorace vix latioribus) cylindricis, profunde et grosse sulcato-punctatis, interstitiis convexiusculis ac remote minuteque uniseriatim punctulatis, vix minus (saltem versus humeros) nigris; antennis pedibusque crassis, piceis, illarum capitulo ferrugineo. Subtus grosse et profunde punctatus.

Long. corp. lin. 2.

Habitat Australiam meridionalem, a Dom. Masters ad "King George's Sound" captus. Communicavit Dom. Pascoe.

Pentamimus suffusus, n. sp.

P. præcedenti fere similis, sed (ut mihi videtur) vix ejus varietas; differt sculpturâ, præsertim in elytris, paulo minus profundâ et minus grossâ, elytris, præcipue antice, sensim suffuse rufescentioribus, striis minus profundis ac postice vix punctatis (punctis sc. ibidem obsoletis), interstitiis paulo magis convexis, fronte distinctius canaliculatâ.

Long. corp. lin. 2.

Habitat Australiam, a Dom. Fry amice communicatus.

Pentamimus canaliculatus, n. sp.

P. rhyncoliformi similis, sed minor, rostro paululum minus convexo et antice late canaliculato; prothorace præsertim in medio densius ac subgrossius punctato (nec in lineâ mediâ, etiam obsoletâ, læviore); elytrorum interstitiis paulo minus convexis, punctisque in sulcis sensim inter se magis remotis.

Long. corp. lin. 2.

Habitat in Tasmania; ad describendum communicavit Dom. Pascoe.

Genus 103. TETRACOPTUS.

Wollaston (*vide, ante, p.* 493).

Tetracoptus reductus, n. sp.

T. cylindricus, convexus, nitidus, niger; capite prothoraceque minutissime et levissime punctulatis, illo crasso, rostro brevissimo lato crasso antice late canaliculato, hôc magno, elongato, triangulari-cylindrico, antice parum distincte constricto; elytris (latitudine prothoracis versus basin) cylindricis, paulo minus nitidis, tenuiter punctato-striatis, interstitiis depressis ac minutissime uniseriatim punctulatis, ad humeros sub-plagiatim rufescentioribus; antennis pedibusque breviusculis, piceis. Subtus alutaceus, subopacus, minute parce et levissime punctulatus.

Long. corp. lin. $1\frac{1}{3}$.

Habitat ins. Nov. Guinea, ad Dorey a Dom. Wallace detectus. A Dom. Pascoe ad describendum missus.

Genus 104. XESTODERMA.

Wollaston (*vide, ante, p.* 494).

a. *Scutellam* (*præsertim in* ♂) *sat magnum, subrotundatum.*

Xestoderma Wallacei, n. sp.

X. angustula, cylindrica, convexa, nitidissima, atra; capite rostroque (brevi) latis, crassis, minutissime punctulatis; prothorace (elongato, cylindrico-ovato, antice leviter constricto) etiam subtilius, sc. subtilissime, punctulato, æquali; elytris cylindricis, leviter striato-punctatis, striis versus suturam profundioribus, interstitiis depressis ac subtilissime parcissimeque punctulatis; antennis pedibusque vix picescentioribus, capitulo ferrugineo. Subtus alutacea, parcissime et levissime punctulata.

Mas, rostro paulo longiore et omnino parallelo; scutello submajore, aut magis rotundato.

Long. corp. lin. $2\frac{1}{4}$—3.

Habitat ins. Malayenses, in Ceram et Ternate a Dom. Wallace lecta. Communicavit Dom. Pascoe.

b. *Scutellum minus, et breve, transversum.*

Xestoderma atra, n. sp.

X. præcedenti paulo minor ac subdistinctius punctulata; rostro inter antennas late et obsolete impresso; scutello

minore, breviore, magis transverso; elytrorumque interstitiis convexioribus.

Long. corp. lin. circa 2.

Habitat ins. Malayenses, a Dom. Wallace in Batchian et Morty deprehensa. Coll. Pascoe.

Genus 105. Xestosoma.

Wollaston (*vide*, *ante*, *p.* 494).

a. *Prothorax basi recte truncatus. Scutellum minutum, brevissimum, transversum.*

Xestosoma grandicolle, n. sp.

X. crassum, cylindricum, convexum, nitidissimum, atrum; capite rostroque (brevi) latis, crassis, fere impunctatis, hôc antice in medio profunde et late canaliculato; prothorace (magno, cylindrico-ovato, antice profunde constricto) fere impunctato, æquali; elytris cylindricis, striato-punctatis (striis levibus, sed punctis sat magnis), interstitiis depressis ac fere impunctatis; antennis pedibusque crassis, vix picescentioribus, capitulo magno, subrotundato, nigrescente, dense velutino.

Long. corp. lin. $2\frac{2}{3}$.

Habitat ins. Malayenses; in Batchian collegit Dom. Wallace. A Dom. Pascoe communicatum.

Xestosoma subopacum, n. sp.

X. crassum, breviter cylindricum, subconvexum, nigrum, antice subnitidum sed postice subopacum; capite rostroque (brevi) crassiusculis, minute sed distincte et parum dense punctulatis, hôc antice in medio profunde et late canaliculato; prothorace minus elongato, subovali basi truncato, utrinque subæqualiter rotundato, antice profunde constricto, dense, grossius profundiusque punctulato, æquali sed lineâ mediâ obsoletissimâ sublævioro; elytris breviter cylindricis, subopacis, punctato-striatis, interstitiis subtilissime parceque punctulatis; scapo tarsisque piceo-ferrugineis, his gracilibus, capitulo magno, ovali, nigrescente, dense velutino.

Long. corp. lin. 2.

Habitat ins. Malayenses, a Dom. Wallace in Batchian detectum. Coll. Pascoe.

b. *Prothorax basi obsolete subsinuatus. Scutellum majus, ac magis rotundatum.* (Subg. Xestomorphus, Woll.)

Xestosoma costipenne, n. sp.

X. elongato-crassiusculum, cylindricum, subconvexum,

subnitidum, nigrum; capite rostroque (brevi) latis, valde incrassatis, distincte et parum dense punctulatis, hôc in medio latissime sed leviter impresso-canaliculato; prothorace (elongato, conico-cylindrico, antice levissime constricto) densissime et profunde punctato, æquali sed in lineâ mediâ tenui obsoletâ sublæviore; elytris elongatis, cylindricis, profunde punctato-sulcatis, interstitiis convexis costiformibus ac minutissime uniseriatim punctulatis; antennis tarsisque piceis.

Long. corp. lin. vix 3.

Habitat ins. Malayenses, a Dom. Wallace (nisi fallor in Sula) detectum. Communicavit Dom. Pascoe.

Genus 106. Lissopsis.

Wollaston (*vide, ante, p.* 495).

Lissopsis speculifrons, n. sp.

L. oblongo-cylindricus, latiusculus, calvus, niger, subnitidus sed in elytris paulo obscurior; capite rostroque dense punctatis, hôc in medio subconcavo et postice transversim politissimo esculpturato; prothorace magno, convexo, subovali, ad latera æqualiter rotundato, paulo profundius sed minus dense punctato; elytris parallelis, breviter cylindricis, profunde et grosse sulcato-punctatis, interstitiis latiusculis ac minutissime uniseriatim punctulatis, postice parce asperatis; pedibus crassiusculis, vix picescentioribus. Subtus subopacus, subalutaceus, parum grosse, sed vix profunde et haud dense, punctatus.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Nov. Guinea, ad Saylee a Dom. Wallace repertus. A Dom. Pascoe ad describendum missus.

Genus 108. Xenotrupis.

Wollaston (*vide, ante, p.* 496).

Xenotrupis fusiformis, n. sp.

X. fusiformis, convexus, nitidus, ater; fronte rostroque (longiusculo, postice angustiore) minute sed distincte et sat dense punctulatis; prothorace magno, elongato, triangulari-ovali, antice levissime (saltem in ♀) constricto, æquali, subtilissime levissimeque punctulato (etiam minutius quam in rostro); elytris levissime substriato-punctatis, interstitiis latis depressis ac subtilissime parcissimeque punctulatis; antennis pedibusque longiusculis, crassiusculis, vix pices-

centioribus, illarum capitulo ferrugineo. Subtus alutaceus, subtilissime parcissimeque punctulatus.

Long. corp. lin. 2—2½.

Habitat ins. Malayenses; in Batchian, necnon ad Dorey in Nov. Guinea, cepit Dom. Wallace. In collectione Dom. Pascoe.

Genus 109. PACHYSTYLUS.

Wollaston (*vide, ante, p.* 496).

Pachystylus dimidiatus, n. sp.

P. cylindrico-fusiformis, convexus, niger; capite prothoraceque (præsertim in ♀) subopacis, et sat grosse (saltem in hôc) punctatis, hôc in lineâ mediâ obsoletâ paulo minus punctato, rostro elongato et (præsertim in ♂) robusto, oculis valde exstantibus; prothorace magno, elongato, antice vix constricto; scutello minuto, punctiformi; elytris (subfusiformibus basi truncatis) nitidioribus et obsoletissime etiam subæneo-tinctis, striato-punctatis, interstitiis convexiusculis ac minutissime (vix perspicue) remoteque subuniseriatim punctulatis; antennis pedibusque elongatis, crassis, piceis. Subtus alutaceus, grosse sed parce et leviter punctatus.

Long. corp. lin. 2⅓—2½.

Habitat Americam australem, in Chili degens. Benigne communicavit Dom. Fry.

Genus 111. EREMOTES.

Wollaston, Trans. Ent. Soc. Lond. 2nd Ser. v. 364 (1861).

Eremotes gravidicornis, n. sp.

E. cylindricus, calvus, subnitidus, niger; rostro brevissimo, lato, crasso, tamen parallelo, apice in medio triangulariter impresso, dense et argute punctulato; oculis valde prominentibus; prothorace elongato, ovato-cylindrico, valde profunde, grosse et dense (in medio sensim remotius) punctato; elytris cylindricis, valde profunde punctato-sulcatis, interstitiis angustis costiformibus ac minutissime uniseriatim punctulatis; antennis pedibusque (saltem illis) crassissimis, picescentioribus, capitulo ferrugineo, tarsis clare rufo-piceis.

Long. corp. lin. 2.

Habitat Europam australem?, a Dom. J. Gray ad describendum benigne missus.

(*Obs.*—Species *strangulato*, Perris, valde affinis, sed

differt rostro subargutius punctulato necnon ad apicem in medio triangulariter impresso, prothorace elytrorumque sulcis paulo grossius punctatis, his multo angustioribus ac magis profundis, sed tamen interstitiis latioribus ac obtusius costiformibus, necnon seriebus punctulorum minutorum in alto, nec in fundo, sitis. *E. strangulatus* et *gravidicornis* a *crassicorni*, Canariensi, discedunt corpore minore, rostro et prothorace in medio paulo densius punctatis, oculis sensim minus prominentibus, scutello subminore atque elytrorum interstitiis angustioribus et convexioribus, aut magis costatis.)

Genus 112. Rhyncolus.

Germar, Ins. Spec. Nov. 307 (1824).

Rhyncolus cylindricollis, n. sp.

R. cylindricus, calvus, subnitidus, niger; rostro brevissimo, lato, crasso, subtriangulari, apice in medio late et obsolete impresso, dense punctulato; oculis valde prominentibus; prothorace elongato, subcylindrico, antice integro (nec constricto), profunde et densissime punctato; elytris (prothorace sensim latioribus) cylindricis, ad basin undulatim truncatis, valde profunde punctato-sulcatis, interstiis costatis ac minute uniseriatim punctulatis; antennis (in medio rostri insertis) pedibusque crassiusculis, piceis-centioribus, capitulo ferrugineo; tarsorum art.° 3^tio^ simplici.

Long. corp. lin. 2.

Habitat Californiam, in collectione Dom. Fry.

(*Obs.*—Species corpore magno cylindrico et grosse sculpturato, rostroque brevissimo lato cum gen. *Eremotes* melius congruens; sed tamen funiculi art.° 2do haud valde abbreviato, prothoraceque antice integro nec constricto.)

Rhyncolus californicus, n. sp.

R. fusiformi-cylindricus, nigro-piceus, subnitidus; rostro brevi, lato, parallelo, dense et profunde punctato, oculis valde prominentibus; prothorace elongato, ovato-triangulari, antice leviter constricto, densissime profundeque punctato, lineâ mediâ lævore; elytris profunde punctato-(aut fere subcrenato-) sulcatis, interstitiis convexis ac minutissime parcissimeque sub-uniseriatim punctulatis; antennis pedibusque crassis, vix rufescentioribus, capitulo

ferrugineo ; tarsorum art.° 3^tio^ fere simplici. Subtus grosse et profunde punctatus.

Long. corp. lin. 2.

Habitat Californiam, a Dom. Fry communicatus.

(*Obs.—R. atro*, Europæ, magnitudine, colore, formâque generali simillimus, sed tamen certe distinctus. Differt elytris sensim magis parallelis, cylindricis, interstitiis convexioribus, corpore omnino magis nitido et paulo grossius densiusque sculpturato, rostro magis parallelo, nec etiam obsolete subtriangulari, prothorace in lineâ mediâ læviore, tarsisque subminus incrassatis.

Rhyncolus punctatus, n. sp.

R. cylindrico-fusiformis, angustulus, rufo-piceus, subnitidus ; rostro brevi, lato, parallelo sed ad basin paululum contracto, dense, profunde et rugose punctato, oculis valde prominentibus ; prothorace elongato, ovato-triangulari, antice profunde constricto, profunde et grosse punctato ; elytris (ad apicem obscure singulatim subrotundatis) profunde punctato- (aut subcrenato-) striatis, interstitiis convexis et distincte uniseriatim punctulatis ; antennis pedibusque crassis, rufescentioribus ; tarsorum art.° 3^tio^ minute sed evidenter bilobo. Subtus profunde, dense et grosse punctatus.

Long. corp. lin. 1½.

Habitat Braziliam ; in provinciâ Rio de Janeiro cepit Dom. Fry.

Rhyncolus similis, n. sp.

R. præcedenti similis, sed subminor, rostro angustiore, prothorace subminore, antice minus constricto, et, una cum elytrorum interstitiis, sensim minus profunde punctato, antennis vix gracilioribus.

Long. corp. lin. 1¼.

Habitat Braziliam ; a Dom. Fry in Rio de Janeiro lectus.

Rhyncolus læviusculus, n. sp.

R. cylindrico-fusiformis, angustulus, clare rufo-piceus (aut fere castaneus), subnitidus ; rostro brevi, latiusculo, parallelo, minute et subremote punctulato, oculis prominentibus ; prothorace elongato, cylindrico-triangulari, antice leviter constricto, alutaceo parum minute et subremote

punctulato; elytris (ad apicem singulatim subrotundatis) leviter punctato- (aut subcrenato-) striatis, interstitiis subdepressis ac minutissime uniseriatim punctulatis; antennis pedibusque crassiusculis, paulo rufescentioribus; tarsorum art.° 3^tio^ minute sed evidenter bilobo. Subtus alutaceus, levissime et parce punctatus.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Braziliam; repertus in Rio de Janeiro a Dom. Fry.

Rhyncolus fusiformis, n. sp.

R. cylindrico-fusiformis, angustus, nigro-piceus (interdum obsoletissime etiam subcyanco-tinctus), subnitidus; rostro brevi, latiusculo, parallelo, sat profunde sed subremote punctato, piceo, oculis prominentibus; prothorace elongato, cylindrico-triangulari, antice leviter constricto, subalutaceo, parum minute sed vix dense punctulato; elytris (ad apicem singulatim subrotundatis) leviter striato-punctatis, interstitiis depressis ac minutissime uniseriatim punctulatis; antennis pedibusque breviusculis, clare rufo-piceis; tarsorum art.° 3^tio^ fere simplici. Subtus subalutaceus, sat grosse sed vix profunde punctatus.

Var. β. elytrorum interstitiis paulo convexioribus ac vix minus distincte uniseriatim punctulatis. (*Bahia.*)

Long. corp. lin. $1\frac{1}{4}$—$1\frac{1}{3}$.

Habitat Braziliam, in provinciis Rio de Janeiro et Bahia degens. Collegit Dom. Fry.

Rhyncolus protensus, n. sp.

R. fusiformi-cylindricus, nitidus, niger; rostro longiusculo, minus lato (tamen robusto), parallelo, arcuato-subcylindrico, dense et profunde punctato, postice in medio tenuiter canaliculato, oculis sat prominulis; prothorace longissimo, subconico, antice subintegro, profundius et parum dense punctato; elytris (latitudine prothoracis pone medium) subcylindricis, vix picescentioribus, profunde punctato-striatis, interstitiis minutissime sub-uniseriatim punctulatis; antennis (in medio, aut mox pone medium, rostri insertis) pedibusque breviusculis, crassiusculis, piceis, capitulo ferrugineo; tarsorum art.° 3^tio^ angusto, integerrimo.

Long. corp. lin. 2.

Habitat Californiam; in collectionibus DD. J. Gray et Janson.

Genus 114. Xenocnema.

Wollaston (*vide*, *ante*, *p.* 499).

Xenocnema spinipes, n. sp.

X. parallelo-oblonga, crassa, depressiuscula, subnitida, picco-ferruginea; rostro breviusculo, robusto, parallelo, densissime rugoseque punctulato, a capite (nitidiore et fere impunctato) lineâ distinctâ diviso; oculis prominentibus; prothorace magno, elongato, subquadrangulari, ad latera subrecto, antice profunde constricto, densissime et argute punctato sed in lineâ mediâ posticâ læviore; elytris subparallelis, basi recte truncatis, postice minute fulvo-pubescentibus, profunde et grosse punctato- (fere crenato-) sulcatis, interstitiis subdepressis ac obtuse costiformibus, costis in medio lineâ dense punctulatâ divisis (quasi e costis duâbus efformantibus); antennis pedibusque breviusculis fere concoloribus. Subtus sat grosse sed haud valde profunde punctata.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Novam Zealandiam; in Auckland collegit Dom. Lawson. A Dom. Sharp ad describendum amice communicata.

Genus 117. Tomolips.

Wollaston (*vide*, *ante*, p. 501).

§ I. *Metasternum breve, et densissime rugoseque punctatum. Pedes, præsertim antici, paulo magis incrassati; tibiis anticis ad angulum internum calcari compresso bifido armatis.*

Tomolips bicalcaratus, n. sp.

T. subfusiformi-cylindricus, subnitidus, niger; rostro subangustulo-triangulari, dense et argute punctulato, oculis demissis, haud late separatis; prothorace magno, subovato-cylindrico, antice fere integro, valde profunde et grosse punctato (punctis maximis); elytris subfusiformi-cylindricis, ad basin undulatim truncatis, ad humeros acute porrectis, profunde et grosse punctato-sulcatis, interstitiis convexis ac minute parceque uniseriatim punctulatis, postice grosse asperatis, ad apicem ipsissimum minute singulatim rotundatis; antennis pedibusque crassis, piceo-centioribus. Subtus valde profunde, grosse, et dense rugoso-punctatus.

Long. corp. lin. 2—$2\frac{1}{4}$.

Habitat Mexico; a Dom. Fry benigne communicatus.

§ II. *Metasternum paulo longius, convexius, et minus dense punctatum. Pedes, præsertim antici, paululum minus incrassati; tibiis anticis calcari parvo simplici armatis.*

Tomolips asperatus, n. sp.

T. præcedenti similis, sed paulo minor, subangustior, ac magis cylindricus (elytris sc. evidentius omnino parallelis); rostro paululum breviore et latiore; prothorace elytrisque vix minus grosse sculpturatis, his ad humeros sensim minus acute porrectis, ac ad apicem integris (nec minute divaricatis). Subtus nitidior, et (præsertim in metasterno abdominisque segmento primo) minus dense ac minus rugose punctatus.

Long. corp. lin. circa 2.

Habitat Mexico; una cum præcedente communicavit Dom. Fry.

Genus 118. Dendroctonomorphus.

Wollaston (*vide, ante, p.* 501).

Dendroctonomorphus muricatus, n. sp.

D. ovato-cylindricus, calvus, nitidus, niger; capite rostroque crassis, illo punctulato, hôc densius punctulato et longitudinaliter striguloso; prothorace magno, ovato-cylindrico, multo profundius grossiusque sed minus dense punctato; antice subintegro, utrinque pone medium sinuato; elytris ovato-cylindricis, ad apicem obtuse truncato-desilientibus, profunde punctato-sulcatis, interstitiis obtuse costatis ac minute confusim punctulatis, postice mucronibus magnis asperatis; antennis (brevissimis) ad apicem tarsisque (longissimis, gracilibus) clare piceo-ferrugineis. Subtus parce et grosse, sed leviter, punctatus.

Long. corp. lin. 2—2$\frac{1}{3}$.

Habitat Ceylon; a Dom. Fry ad describendum missus.

Dendroctonomorphus parallelus, n. sp.

D. cylindricus, angustulus, (nisi oculo fortissime armato calvus, sed vere) antice et postice necnon subtus minutissime parcissimeque sericatus, subnitidus, niger; capite rostroque crassis, illo punctulato, hôc densius punctulato et longitudinaliter substriguloso; prothorace ovato-cylindrico, profundius grossiusque dense punctato, antice leviter constricto, utrinque pone medium subsinuato; elytris

parallelis, cylindricis, ad apicem obtuse truncato-desilientibus, punctato-sulcatis, interstitiis convexis ac minutissime uniseriatim punctulatis, postice mucronibus parvis dense asperatis; antennis (brevissimis) ad apicem tarsisque (longissimis, gracilibus) clare piceo-ferrugineis. Subtus parce, grosse, et profunde punctatus.

Long. corp. lin. $1\frac{3}{4}$.

Habitat Mexico; in collectione Dom. Fry.

Genus 120. Calyciforus.

Wollaston (*vide*, *ante*, *p.* 502).

Calyciforus excavatus, n. sp.

C. cylindricus, calvus, nitidus, niger; capite rostroque crassis, subalutaceis, illo punctulato, hôc dense longitudinaliter substriguloso; prothorace magno, subovato-cylindrico, profundius grossiusque punctato et utrinque longitudinaliter strigoso, antice subintegro sed in medio transversim impresso, basi marginato, necnon in medio (ante scutellum, magnum) valde profunde arguteque triangulariter exciso; elytris cylindricis sed ad apicem sublatioribus et ibidem obtuse truncato-desilientibus, basi grosse marginatis, latissime et profunde sulcatis (sulcis opacis ac dense transversim strigosis), interstitiis latis costatis nitidis et subgrosse uniseriatim subasperato-punctatis; antennis (brevissimis) pedibusque (robustis) piceis, tarsis (longissimis, gracilibus) clarioribus. Subtus subalutaceus, subopacus, grosse sed leviter punctatus.

Long. corp. lin. $2\frac{2}{3}$—$3\frac{1}{4}$.

Habitat Braziliam, in provinciis Sta Catharina et Bahia repertus. Communicaverunt DD. Fry et Janson.

Calyciforus erosus, n. sp.

C. præcedenti affinis, sed vix (nisi fallor) ejus sexus alter; minor; capite rostroque paulo minus incrassatis, subnitidioribus (sc. haud alutaceis), et minus dense punctatis, hôc sensim angustiore; prothorace paulo angustiore minusque ovato (aut magis cylindrico), grossius punctato (punctis magis longitudinaliter subconfluentibus), postice in medio sub-longius excavato; elytris postice haud sublatioribus, sulcis minus latis, minus opacis ac minus dense transversim strigulosis (sc. strigis magis evidenter regulariter interruptis, quasi punctos transversos efficientibus), punctis in interstitiis subminoribus, interstitiis 1mo et 2do ad

basin (juxta scutellum) minus incrassato-confluentibus; antennarum capitulo vix subminore.

Long. corp. lin. vix $2\frac{1}{2}$.

Habitat Braziliam; in provinciâ Rio de Janeiro collegit Dom. Fry.

Genus 121. Eurycorynes.

Wollaston (*vide, ante, p.* 503).

Eurycorynes Jansonianus, n. sp.

E. cylindricus, calvus, subnitidus, niger; capite rostroque crassis, densissime longitudinaliter subtrianguloso-punctatis; prothorace subovato-cylindrico, densissime et grossius strigoso-punctato, in medio carinulâ lævi (antice et postice evanescente) instructo; elytris cylindricis, late et parum profunde sulcatis (sulcis in fundo leviter punctatis), interstitiis latiusculis costatis ac uniseriatim subasperato-punctatis, antice in medio densius subtransversim rugulosis et in parte posticâ minutissime subserratulo-asperatis; pedibus piceis; antennis (brevibus) tarsisque (longissimis, gracilibus) piceo-ferrugineis. Subtus subalutaceus, parum grosse sed vix profunde punctatus,—punctis versus apicem decrescentibus.

Long. corp. lin. 2.

Habitat Braziliam, in Rio de Janeiro a Dom. Fry repertus. A provinciâ Minas Geraes communicavit Dom. Janson, cujus in honorem nomen specificum stabilivi.

Genus 122. Stenoscelis.

Wollaston, Journ. of Ent. i. 141 (1861).

Stenoscelis crassifrons, n. sp.

S. breviter cylindricus, subnitidus, niger, postice et subtus minute et parce fulvo-pubescens; capite magno, globoso, crassissimo, et, una cum rostro, densissime et sat grosse punctato, hôc brevissimo latissimo crasso; prothorace (ante basin latitudine elytrorum) magno, subcylindrico-ovato, antice constricto, necnon ad latera pone medium subsinuato, grossius et vix minus dense punctato; elytris cylindricis, ad apicem obtuse rotundatis, late et parum profunde sulcato-punctatis, interstitiis convexis subuniseriatim punctulatis et postice parce sed distincte muricato-asperatis, antice versus scutellum transversim

subplicato-rugosis: antennis tarsisque clare piceo-ferrugineis. Subtus convexus, alutaceus, dense sed haud profunde punctatus.

Long. corp. lin. $1\frac{2}{3}$.

Habitat Africam australem (Caput Bonæ Spei), in collectione Dom. Fry.

(*Obs.*—*S. hylastoides*, Woll., affinis, sed profundius grossiusque sculpturatus, necnon postice et subtus minute sed parce fulvo-pubescens; capite majore, crassiore, sc. globoso, permagno; rostro etiam breviore, latiore, sc. brevissimo; oculis sensim minus, tamen valde, depressis; prothorace majore, longiore, postice latiore, antice minus constricto, ad latera paulo minus sinuato; elytrisque ponc basin obsolete transversim impressis.)

Species hujus Familiæ a meipso visæ.

Subf. 1. Notiomimetides.

Notiomimetes Pascoei, W. .. .. Australia.

Subf. 2. Dryophthorides.

Psilodryophthorus costatus, W. .. .. .. Nov. Guinea.
Stenommatus Fryi, W. .. .. Mexico.
Dryophthorus lymexylon, Fab... .. .. .. Europa.
Tetratemnus sculpturatus, W. .. .. China, ins. Japon.

Subf. 3. Pentarthrides.

Synommatus confluens, W. .. .. Borneo.
Chærorrhinus squalidus, Fairm. .. .. .. Europa anstr.
Pentacoptus gronopiformis, W. .. .. .. ins. Japon.
Lyprodes cylindricus, W. .. .. ins. Malayens.
Phlœophagomorphus angusticollis, W. .. .. Nov. Granada.
Pseudopentarthrum phlœophagoides, W. .. .. Mexico.
Xenosomatium tibiale, W. .. .. ins. Malayens.
Pentarthrum Huttoni, W. .. .. Europa.
——— zealandicum, W. .. .. Nov. Zealand.
——— nitidum, W. .. .. Chili.
——— affine, W. .. .. ——
——— longirostre, W. .. .. Nov. Zealand.
——— subsericatum, W. .. .. ——————
——— rugosum, W. .. .. Nov. Guinea.
——— sublævigatum, W. .. .. ins. Malayens.
——— cylindricum, W. .. Brazil, ins. Ascension, ins. Malayens.
——— Grayii, W. .. .. Brazil.
——— nigrum, W. .. .. Tasmania.
——— angustissimum, W. .. .. ins. Japon.
Sericotrogus subænescens, W. .. .. Nov. Zealand.
Stenotrupis crassifrons, W. .. .. ins. Malayens.
——— acicula, W. .. .. Cuba.
Microcossonus Wallacei, W. .. .. Nov. Guinea.
Cossonideus Pascoei, W. .. .. Australia.
Tychiodes Adamsii, W. .. .. ins. Japon.
Tychiosoma gracilirostre, W. .. .. ins. Philipp.
Leptomimus fragilis, W. .. .. ins. Malayens.
——— delicatulus, W. .. .. — ——————
Lamprochrus cossonoides, W. .. .. ins. St. Helena.
Acanthomerus armatus, W. .. .. — ——————
——— conicollis, W. .. .. — ——————
——— monilicornis, W. .. .. — ——————
——— angustus, W. .. .. — ——————
——— debilis, W. .. .. — ——————
——— obliteratus, W. .. .. — ——————
——— terebrans, W. .. .. — ——————
Microxylobius Westwoodii, Chev. .. .. .. — ——————
——— vestitus, W. .. .. — ——————
——— lacertosus, W. .. .. — ——————
——— dimidiatus, W. .. .. — ——————
——— lucifugus, W. .. .. — ——————
Microtribus Huttoni, W. .. .. Nov. Zealand.
Mesoxenomorphus africanus, W. .. .. .. Africa anstr.
Heteropsis Lawsoni, W. .. .. Nov. Zealand.

Amaurorrhinus Monizianus, W. .. ins. Maderens. et Canariens.
——— Bewickianus, W. .. .. ins. Maderens.
——— Bonnairii, Fairm. .. .. Europa austr.
Pseudomesoxenus subcæcus, W. .. .. .. ins. St. Helena.
Pentatemnus arenarius, W. .. .. ins. Canariens.
——— affinis, W. .. .. ins. Cap. Verde.
Halorhynchus cæcus, W. .. .. Australia.

Subf. 4. Onycholipides.

Georrhynchus Mortetii, Roelofs .. .. .. America austr.
Onycholips bifurcatus, W. .. .. ins. Canariens.
Raymondionymus Marqueti, Aubé .. .. .. Europa austr.
Alaocyba carinulata, Perris .. .. Sardinia.
——— Dalarouzeei, Bris. .. .. Europa austr.

Subf. 5. Cossonides.

Lipommata calcaratum, W. .. .. ins. Maderens.
Styphloderes exculptus, Bohm. .. Europa austr. et Africa boreal.
Cotaster uncipes (Chev.), Bohm. .. .. .. Europa austr.
Caulotrupis conicollis, W. .. .. ins. Maderens.
——— pyricollis, W. .. .. — ———
——— opacus, W. .. .. — ———
——— Chevrolatii, W. .. .. — ———
——— terebrans, W. .. .. — ———
——— impius, W. .. .. — ———
——— lucifugus, W. .. .. — ———
——— subnitidus, W. .. .. — ———
——— lacertosus, W. .. .. — ———
Phlœophagus calvus, W. .. .. — ———
——— piceus, W. .. .. ins. Canariens.
——— simplicipes, W. .. .. — ———
——— laurineus, W. .. .. — ———
——— caulium, W. .. .. — ———
——— obesulus, W. .. .. ins. Cap. Verde.
——— spadix, Hbst. .. .. ins. Maderens., Europa.
——— æneopiceus, Bohm. .. .. Europa.
Pseudophlœophagus tenax, W. .. .. .. ins. Azoric., et Maderens.
Thaumastophasis oculatus, W. .. .. Australia.
Himatium pubescens, W. .. .. India.
Pholidonotus squamosus, W. .. .. Borneo.
Coptorhamphus subfasciatus, W. .. .. .. Java.
——— strangulatus, W. .. .. Borneo.
Aphanommata euphorbiarum, W. .. .. .. ins. Cap. Verde.
Brachyscapus crassirostris, W. .. .. Africa austr.
Phlœophagosoma sinnaticolle, W. .. .. .. ins. Malayens.
——— glaberrimum, W. .. .. Java.
——— rotundicolle, W. .. .. ins. Malayens.
——— curvirostre, W. .. .. ins. Japon.
——— fusirostre, W. .. .. Nov. Guinea.
——— vicinum, W. .. .. Borneo.
——— angustulum, W. .. .. ins. Malayens.
——— opaculum, W. .. .. — ———
——— minutum, W. .. .. ins. Japon.
——— morio, W. .. .. Ceylon.
——— atratum, W. .. .. ———
——— corvinum, W. .. .. Nov. Zealand.
——— puncticolle, W. .. .. Malacca.
——— proximum, W. .. .. ins. Malayens.
Pholidoforus squamosus, W. .. .. ins. Japon.

Coprodema calandræformis, W. .. .. ins. Japon.
Exodema sublutosa, W. .. .. — ———
Melorhinus nigritus, W. .. .. Madagascar.
Psilosomus opacus, W. .. .. pen. Malayens., Ceylon.
Amorphocerus rufipes, Bohm. .. .. Africa austr.
——— zamiæ, Bohm. .. .. ——— ———
Lipancylus inarmatus, W. .. .. Amazon.
Aorus spadiceus, Gyll. .. .. Africa.
Homaloxenus dentipes, W. .. .. St. Domingo.
Stenotis acicula, W. .. .. ins. Madereus.
Eucoptus depressus, W. .. .. Brazil.
Mesites pallidipennis, Bohm. .. .. Europa.
——— cunipes, Bohm. .. .. ———
——— aquitanus, Fairm. .. .. ———
Rhopalomesites complanatus, W. .. .. ins. Canariens.
——— Tardii, Curt. .. .. ins. Britann.
——— maderensis, W. .. .. ins. Madereus.
——— persimilis, W. .. .. ins. Canariens.
——— euphorbiæ, W. .. .. ins. Maderens.
——— proximus, W. .. .. ins. Canariens.
Odontomesites fusiformis, W. .. .. — ———
——— pubipennis, W. .. .. — ———
——— Hesperus, W. .. .. ins. Cap. Verde.
Megalocorynus depressus, Bohm. .. .. Mexico.
——— capitatus, W. .. .. ———
Catolethrus longulus, Bohm. .. .. ———
——— lævisculus, W. .. .. Brazilia.
——— Grayii, W. .. .. ———
——— productus, W. .. .. ———
——— parvus, W. .. .. ———
——— basalis, W. .. .. ———
Stenotribus angusticollis, W. .. .. ———
Phacegaster nasalis, Bohm. .. .. ———
Glœodema spatula, W. .. .. Nov. Guinea.
——— ruficollis, W. .. .. ———
Glœoxenus armatus, W. .. .. Madagascar.
Exonotus basalis, W. .. .. ins. Malayens.
Pscudocossonus dimidiatus, W. .. .. Nov. Guinea.
——— brevitarsis, W. .. .. ins. Japon.
——— brachypus, W. .. .. — ———
Catolethromorphus nigripes, W. .. .. India.
Brachychænus pallidulus, W. .. .. Borneo.
Stenomimus Fryi, W. .. .. Brazilia.
Micromimus Batesii, W. .. .. Amazon.
——— pumilio, W. .. .. ins. Trinidad.
——— nigrescens, W. .. .. Mexico.
Glœotrogus politissimus, W. .. .. ins. Malayens.
Homalotrogus angustifrons, W. .. .. — ———
Isotrogus tabellatus, W. .. .. — ———
——— maurus, W. .. .. — ———
Heterophasis ruficollis, W. .. .. Nov. Guinea.
——— concolor, W. .. .. ———
——— glabricollis, Bohm. .. .. Africa austr.
Cossonus ferrugineus, Clairv. .. .. Europa.
——— linearis, Fab. .. .. ———
——— cylindricus, Sahlb. .. .. ———
——— corticalis, Fab. .. .. Brazil.
——— sulcirostris, Bohm. .. .. Mexico.
——— suturalis, Bohm. .. .. Africa austr.
——— elongatulus, Fab. .. .. ———

Cossonus spathula, Bohm.	Cuba.
—— Lebasii, Bohm.	Columbia.
—— impressus, Bohm.	Jamaica.
—— scrobicollis, Chevr.	Columbia.
Hyponotus subpubescens, W.	Singapore.
Boroplæus puncticollis, W.	Mexico.
—— minor, W.	America bor.
Pachytrogus crassirostris, W.	Chili.
Stereoborus robustus, W.	Nov. Guinea.
—— affinis, W.	ins. Malayens.
—— punctirostris, W.	—
Stercotribus scabrifrons, W.	—
—— fissifrons, W.	—
—— incisus, W.	Ceylon.
—— tuberculifrons, W.	
Stereomimetes crassicornis, W.	Australia.
Stereoderus barbatus, W.	ins. Malayens.
—— simplex, W.	—
—— pacificus, W.	ins. Fiji.
Oxydema fusiformis, W.	Ceylon.
—— attenuata, W.	Nov. Guinea.
—— puncticollis, W.	ins. Malayens.
Notiosomus major, W.	Australia.
—— australis, W.	
—— congener, W.	
Aphanocorynes depressus, W.	
Orthotemnus reflexus, W.	ins. Malayens.
Macrorhyncolus crassiusculus, W.	ins. Japon.
—— crassitarsis, W.	Ceylon.
Heterarthrus Lewisii, W.	ins. Japon.
—— pallidipennis, W.	—
—— pictus, W.	—
Conarthrus tarsalis, W.	ins. Malayens.
—— cylindricus, W.	—
—— vicinus, W.	Cochin China.
Eutornus Jansoni, W.	Ceylon.
—— ferrugineus, W.	ins. Malayens.
—— dubius, W.	Nov. Zealand.
Coptus oculatus, W.	ins. Malayens.
—— minor, W.	Nov. Guinea.
Pachyops cylindricus, W.	Borneo.
Pentamimus rhyncoliformis, W.	Australia.
—— suffusus, W.	
—— canaliculatus, W.	Tasmania.
Tetracoptus reductus, W.	Nov. Guinea.
Xestoderma Wallacei, W.	ins. Malayens.
—— atra, W.	—
Xestosoma grandicolle, W.	—
—— subopacum, W.	—
—— costipenne, W.	—
Lissopsis speculifrons, W.	Nov. Guinea.
Sphærocorynes Lewisianus, W.	ins. Japon.
Xenotrupis fusiformis, W.	ins. Malayens.
Pachystylus dimidiatus, W.	Chili.
Xenomimetes destructor, W.	ins. Japon.
Eremotes crassicornis, Brullé	ins. Canariens.
—— strangulatus, Perris	Europa.
—— gravidicornis, W.	?
Rhyncolus cylindricollis, W.	California.
—— californicus, W.	

Rhyncolus ater, Linn.	Europa.
——— brunneus, Mann.	Sitkha.
——— punctatulus, Bohm.	Europa.
——— reflexus, Bohm.	———
——— punctatus, W.	Brazilia.
——— similis, W.	———
——— lævinsculus, W.	———
——— fusiformis, W.	———
——— protensus, W.	California.
——— gracilis, Rosenh.	Europa.
——— cylindrirostris, Oliv.	———
Caulophilus sculpturatus, W.	ins. Maderens.
Xenocnema spinipes, W.	Nov. Zealand.
Stereocorynes truncorum, Germ.	Europa.
Hexarthrum submuricatum, Bohm.	———
——— culinare, Germ. .. .. .. ins.	Maderens., ———
——— brevicorne, W.	ins. Japon.
Tomolips bicalcaratus, W.	Mexico.
——— asperatus, W.	———
Dendroctonomorphus muricatus, W.	Ceylon.
——— parallelus, W.	Mexico.
Brachytemnus porcatus, Müll.	Europa.
——— pinipotens, W.	ins. Canariens.
Calyciforus excavatus, W.	Brazilia.
——— erosus, W.	———
Eurycorynes Jansonianus, W.	———
Stenoscelis hylastoides, W.	Africa austr., St. Helena.
——— gracilitarsis, W.	ins. Japon.
——— crassifrons, W.	Africa austr.

APR 30 1874

PROCEEDINGS

OF THE

ENTOMOLOGICAL SOCIETY OF LONDON

FOR THE YEAR

1873.

3 February, 1873.

H. W. Bates, Esq., F.L.S., Vice-President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' vol. xxi., no. 140; presented by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1872, no. 2; by the Society. 'Berliner Entomologische Zeitschrift,' t. xvi., 2—4; by the Society. 'Mémoires de la Société de Physique et d'Histoire Naturelle de Genève,' t. xxi., 2e partie; by the Society. 'L'Abeille,' tome ix., livr. 1 and 2; by the Editor. 'The Entomologist's Monthly Magazine,' for February; by the Editors. Newman's 'Entomologist,' for February; by the Editor. 'The Zoologist,' for February; by the Editor. 'The Canadian Entomologist,' vol. iv., no. 12; by the Editor. 'Notes on the Species of Saturnidæ, or Ocellated Silkworm Moths, in the Collection of the Royal Dublin Society,' by W. F. Kirby; by the Author. 'Un mot sur le mode d'adhérence des mâles de Dytiscides aux femelles pendant l'acte de l'accouplement,' par Félix Plateau; by the Author. 'Excursions Lepidoptérologiques aux Hautes-Fanges pendant l'été de 1872,' par MM. Ch. Donckier et L. Quaedvlieg; by the Authors.

Election of Member.

William Cole, Esq., of 10, Aberdeen Terrace, the Downs, Clapton, was balloted for, and elected a Member of the Society.

Exhibitions, &c.

Mr. F. Smith brought for exhibition a box of Indian Hymenoptera collected by Mr. Rothney at Nuddea, in the district of Minchindipore, about eighty miles from Calcutta. It comprised about 200 specimens of Fossores, 160 Apidæ, and 230 Formicidæ. Of the Fossores there were, apparently, only two undescribed species out of about forty, and the same with the Apidæ; but amongst the species of Formicidæ there were eight or ten which appeared to be undescribed. They were all in extremely fine condition; the most interesting species in the collection being a new Astata, and four or five beautiful species of the genus Nomia among the bees.

Mr. M'Lachlan exhibited the quadrangular case of the larva of a Trichopterous insect, together with the larva itself, preserved in glycerine. These had been placed in his hands by the Rev. A. E. Eaton, who found them in the Dove, a swiftly running stream in Derbyshire. He supposed it to pertain to Brachycentrus subnubilus, as the larvæ of that species were now known to manufacture quadrangular cases. Mr. Eaton, however, stated that he was not quite satisfied that the case and larva found by him were actually those of Brachycentrus, for he had never seen that genus in the part of the Dove in which he found them, though it occurred lower down the stream.

Mr. Champion exhibited specimens of a large species of Pulex found by Mr. F. Walker in a mouse's nest in the Isle of Sheppy.

Mr. Bird exhibited a specimen of Cerastis erythrocephalus, taken on the 28th of October last at Darenth Wood.

Mr. Meldola exhibited a living specimen of a myriapod of the genus Spirobolus, which had been sent to him from San Francisco. Also eggs of a leaf insect (Phyllium pulchrifolium) from Java. He also shewed a specimen of a Noctua impaled on a thorn, supposed to have been done by a shrike. Mr. Weir was inclined to think that, in this case, the insect was so impaled; but he believed that insects were frequently impaled by other means.

Mr. Pascoe called attention to a remark made by Mr. Walker in the February part of the 'Entomologist,' to the effect that the fireflies (*Lucciola Italica*), seen in abundance in Italy, had probably entered that country from the East, and were hindered by the Maritime Alps from occupying the Mediterranean coast of France. He (Mr. Pascoe) had seen the insect in abundance in France between Cannes and the Var, and was desirous of ascertaining if any entomologist had noticed it further westward in France.

Mr. Albert Müller communicated the following notes regarding the originators of the pouch-galls on cinnamon:—

"On the 4th of March, 1872, I exhibited before the Society some specimens of an open pouch-gall on the leaves of Cinnamomum nitidum,

from Bombay; and in a note on the subject (Proc. Ent. Soc. Lond. 1872, p. ix., and 'Zoologist,' 1872, p. 3036), I was inclined to attribute them probably to the action of a mite, belonging perhaps to the genus Phytoptus.

"In reference to this question, my valued correspondent, Dr. Fr. Thomas, to whom I had communicated the said note, has since expressed the opinion that it will have to be tested by further observations, whether the gall owes its origin to a mite, and that he doubts it (Giebel's Zeitschr. f. d. ges. Naturwissensch. 1872, p. 475).

"I am quite of the same opinion as my learned friend, that the matter requires further elucidation, but residents in the East can best solve the riddle, either by careful investigations on the spot, or by the transmission of materials to Europe.

"This seems the proper place to allude to the fact that an allied, if not identical creature, attacks the leaves of cinnamon bushes in Ceylon. John Nietner has placed on record that in the neighbourhood of Colombo, where there exist old Dutch plantations of cinnamon bushes, 6000 to 8000 acres in extent, the bushes often form a single, monstrous, tangled mass, their leaves being curled up by numerous swellings of the size of peas or beans. The acorn-shaped fruits of the same plant are often similarly affected, swelling up until they assume the size and colour of a walnut. Nietner puts the question whether these excrescences might not be the work of a Cynips; but as he subsequently compares them to the bulged-out leaves of some species of Ribes, inhabited by Aphidæ, we must leave his former supposition out of consideration (Stettin Ent. Zeitung, 1857, p. 39).

"In a letter which I have since received from Dr. Thomas, this gentleman expresses his supposition that the Bombay excrescences may be produced by one of the Psyllodes. If we bear in mind what Nietner says of the Singalese form, Dr. Thomas's opinion undoubtedly becomes entitled to much consideration, and may eventually turn out to be founded in fact. For my own part I prefer to suspend my judgment until fresh materials from the East shall have enabled me to examine the excrescences in question, as well as their inhabitants, more in detail."

The Rev. Mr. Eaton stated that he had had a specimen of a Trombidium given to him, which had been taken by Mr. Benjamin Lee Smith, in September last, at Spitzbergen.

Papers read, &c.

"On the Hydroptilidæ, a Family of the Trichoptera," by the Rev. A. E. Eaton, M.A.

"A Monographic List of the Species of Gasteracantha or Crab-Spiders, with descriptions of new species, &c.," by Arthur G. Butler, F.L.S., F.Z.S., &c.

17 February, 1873.

Prof. Westwood, M.A., F.L.S., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Illustrations of Diurnal Lepidoptera,' part v. Lycænidæ; presented by the Author, W. C. Hewitson, Esq. 'Bidrag till Rännedom af Finlands Tryphonider'; and, 'Materialier till en Ichneumonologia Fennica'; by the Author, F. W. Woldstedt.

Election of Members.

Alfred E. Hudd, Esq., of Redland Park, Bristol (formerly a Subscriber), was balloted for and elected an Ordinary Member; and Dr. Hermann Burmeister, of Buenos Ayres, was elected a Foreign Member of the Society.

Exhibitions, &c.

Mr. F. Bond exhibited a series of bred specimens of Acronycta tridens and A. Psi, with preserved larvæ of the two species. The specimens of A. tridens had all been reared on the common pear. He remarked that the dark specimens so often occurring in A. Psi were never repeated in A. tridens; and that the latter always exhibited a pinkish tint in fine fresh-bred specimens, which, however, was very evanescent.

Mr. Müller exhibited some cases of a species of Psyche, formed of twigs arranged spirally, and also the egg-case of a species of Mantis; these had been sent from Calcutta by Mr. G. A. James Rothney.

Professor Westwood exhibited two Dipterous larvæ preserved in spirits which were probably those of Psila rosæ. These had been discharged by a female in a clot of phlegm. He suggested when they were submitted to him that the person had probably been eating raw carrots, which, upon enquiry, turned out to have been the case. After they had been immersed in spirits for three or four days he took them out for examination, when he was surprised to find they were still alive. He also exhibited drawings of a dipterous larva (probably Merodon clavipes, *Fab.*) infesting some bulbs sent to him from the Continent. Also drawings of woody excrescences on stems of vine, which had probably been formed by a beetle of the genus Otiorhynchus. Mr. Müller remarked that Mr. Riley had recorded a similar habit in an American beetle (Baridius Sesostris, *Lec.*).

Professor Westwood further exhibited drawings of the root-fibres of a vine, dilated and constricted in a joint-like manner, which he thought was owing to former attacks of Phylloxera.

Mr. Briggs exhibited parallel series of the large and small forms of Anaitis plagiata taken by him in Tilgate Forest, in the month of June,

stating that he had found only the larger form last year, in the same place in which he had found only the smaller form three years before. It was commonly supposed that the smaller form was only a second brood, but this did not appear to be the case.

Papers read, &c.

"On the Geodephagous Coleoptera of Japan, chiefly collected by Mr. George Lewis," by H. W. Bates, F.L.S., &c.

"Contributions to Entomological Bibliography up to 1862, No. 1," by Albert Müller, F.L.S.

Mr. F. Smith read the following translation of some notes, "On the Salivary Organs of the Honey Bee," by C. Th. v. Siebold:—

"At the annual agricultural meeting held in October, 1871, at Munich, a well-known apiarian, Herr Mehring, had exhibited a peculiar kind of honey, named by him 'Kunst-Honig' (artificial honey), which he had produced by feeding his bees exclusively with malt. This honey excited great interest; and the question was raised (and denied by many), whether this substance was real honey; and whether, consequently, the bee was able to change malt-sugar in its stomach into honey. The physiologico-chemical part of the inquiry into the production of the bee was taken up in Liebig's laboratory by Dr. Von Schneider, who, unfortunately, was prevented from carrying the investigation to the end, but arrived at the conclusion that the hydrates of carbon (malt-sugar and malt-deatrin) contained in the malt are actually changed by the bee into honey-sugar; and that Mehring's honey does certainly not differ from other honies, except in the absence of specific aromas which are imparted to them from the flowers on which the bees have been collecting. Practically, Herr Mehring's discovery is of importance; inasmuch as the malt-food prepared by him contains not only all the ingredients necessary for the life of the bee, but also for the formation of honey; and therefore can be used with advantage in parts of the country where flowering plants are scarce. With regard to the wax, Dr. Von Schneider maintains that it is undoubtedly a secretion of the honey-bee, formed chiefly out of different kinds of sugar; but that the production of wax from sugar is not continued without the simultaneous addition of food containing nitrogen. After the fact had thus been established that honey and wax are not substances found ready made, and simply gathered by the bee; but productions which have undergone chemical changes through having come in contact with the secretions of the insect; Prof. Von Siebold directed his attention to the investigation of the secreting organs, a portion of the anatomy which, indeed, had previously been entirely neglected, but is now treated for the first time with regard to the special functions those organs appear to perform in the preparation of the products of the bee.

Prof. Von Siebold distinguishes three entirely distinct and very complicated systems of salivary glands; two of which, a lower and an upper, are situated in the head, and the third in the anterior part of the thorax, the latter having been erroneously regarded by Fischer as a lung. Each of them has separate excretory ducts, and is distinguished by a specifically different form and organization of the vesicules secreting the saliva. Each consists of a right and left glandular mass, with right and left excretory ducts.

"For the detailed account of their minute structure we must refer to the paper itself, and the plate accompanying it, but we must add that this extraordinary development of the salivary organs has been observed by Prof. Von Siebold in the workers only. The queen possesses only a rudiment of the lower cephalic system in the form of the two orifices of its ducts, whilst the ducts themselves with the glands are absent; and the two other systems are much less developed than in the workers. In the drones not even the orifices of the lower cephalic system could be found." (Bienenzeitung, 1872, No. 23).

Mr. Meldola, at the request of Mr. J. Jenner Weir, referred to the chemical composition of malt-sugar as compared with sugar in honey. It was stated that malt-sugar had the same composition as glucose; while honey, in addition to glucose, contained cane-sugar or saccharose. Mr. Weir remarked that it was an interesting fact that this chemical transformation of malt-sugar into a sugar containing a different percentage of carbon should take place in the economy of the honey-bee.

Mr. Smith read 'Descriptions of Aculeate Hymenoptera of Japan, collected by Mr. Geo. Lewis, at Nagasaki and Hiogo. Of seventy-three species, forty-nine were previously unknown. He remarked that the distinctness of his Apis nigrocincta from A. mellifica, recently questioned by Dr. Gerstäcker, had been abundantly confirmed by the discovery of a queen of A. nigrocincta.

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3 March, 1873.

Prof. Westwood, M.A., F.L.S., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 141; presented by the Society.—'Bulletino della Società Entomologica Italiana,' iv. Pt. 4; by the Society.—'The Entomologist's Monthly Magazine' for March; by the Editors.—'The Entomologist,' and 'The Zoologist for March;' by the Editor.—'Horæ Societatis Entomologicæ Rossicæ,' t. viii. No. 4, t. ix.

No. 2; by the Society.—'Stettiner Entomologische Zeitung,' xxxiv, Nos. 1—3; by the Entomological Society of Stettin.

Election of Members.

Noah Greening, Esq., of Warrington, a Subscriber to the Society, was balloted for and elected an Ordinary Member, and Edward Charles Buxton, Esq., of Daresbury Hall, Warrington, was elected a Subscriber to the Society.

Exhibitions, &c.

Mr. Howard Vaughan exhibited a box containing about two hundred specimens of Japanese Lepidoptera, collected near Yokohama by Mr. Henry Pryer; many of the species being apparently new. Some also were remarkable as bearing a close resemblance to British species. Mr. Moore noticed a strong Indian character in several of the insects.

The President remarked that Mr. Higgins had shown him a specimen of a Cremastocheilus from Japan, which was identical with a species that had been taken by Mr. Lord on the West coast of North America.

Mr. F. Smith exhibited some insects bearing a most remarkable reremblance to each other, although belonging to different orders. Thus, Euglossa dimidiata and another Euglossa, a Genus of Apidæ, bore a striking resemblance to two species of the Dipterous family Asilidæ, namely, Dasyllis hæmorrhoa and Mallophora tibialis, all from South America. Also, Abispa splendida, one of the Vespidæ, and an insect of the Dipterous genus Lachites(?), both from New Holland. Also, a bee of the genus Megachile, and one of the Asilidæ, Mallophora calida, *Wied.*, from South America. With regard to the two last-mentioned insects, Mr. Smith noticed that the Asilus not only resembled the bee in its general appearance, but that also it was furnished on the under side of the abdomen with a brush similar to the pollen-brush of Megachile; although it was not apparent for what purpose the insect required it.

The President remarked that when he was at Casa Brucciata, near Ancona, he observed several insects of the genus Osmia extracting the black pollen from poppies; and on the sandy shore he noticed the same insects collecting the sand on their ventral brushes. He therefore concluded that the brushes were used, not only for collecting the pollen, but also for carrying the grains of sand to their nests, which he observed them in the act of constructing on walls.

Mr. Champion exhibited specimens of Bagöus brevis, *Schaum;* taken in this country by Dr. Power, although not hitherto observed in Britain.

Mr. Müller directed attention to an article in the last number of the 'Petites Nouvelles,' explaining a method of obtaining silk from cocoons which had been eaten through by the insects; and that the silk so obtained

from the damaged cocoons was equal in quality to that obtained from the perfect cocoons, and did not require to be carded.

The President remarked that the library at the new Museum at Oxford had been very much infested, of late, with Anthreni; and he was very glad to observe that there was a paper by Dr. Emery in the 'Bulletino della Società Entomologica Italiana,' on a new method of preserving collections from their ravages.

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17 March, 1873.

Prof. Westwood, M.A., F.L.S., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors;—'Proceedings of the Royal Society,' No. 142; presented by the Society. 'Proceedings of the Scientific Meetings of the Zoological Society of London for the Year 1872,' and Index 1861—70; by the Society. 'The Canadian Entomologist,' vol. v. No. 1; by the Editor. 'L'Abeille, 1872,' livr. 3 & 4; by the Editor. 'The Entomologist's Annual for 1873'; by H. T. Stainton, Esq.

Election of Member.

M. Ernest Olivier, of Moulins (Allier), France, a grandson of the celebrated French entomologist of that name, was balloted for and elected a Foreign Member.

Exhibitions, &c.

The President exhibited a specimen of a very rare species of Paussus from Abyssinia, in which the hinder part of the thorax was constricted, quite unlike any of the other species.

Mr. F. Smith exhibited a further collection of ants sent by Mr. G. A. James Rothney, from Calcutta. They were collected by him in a very restricted area, principally in the Eden Gardens, Calcutta, between the months of June and October of last year. The specimens which Mr. Smith had been able to determine were thirty in number, namely:—

Formicidæ (eight species).—Camponotus compressus, *Fabr.*; C. sylvaticus, *Oliv.*; C. opaciventris, *Mayr*, n. sp.; C. Bacchus, *Smith*; Polyrhachis spiniger, *Mayr.*, n. sp.; P. Shrinax, *Roger*; P. lævissimus, *Smith*; Œcophylla smaragdina, *Fabr.* *Poneridæ* (six species).—Bradyponera longitarsis, *Mayr.*, n. gen. & sp.; Lobopelta chinensis, *Mayr.*; L. mutabilis, *Smith*; L. punctiventris, *Mayr.*, n. sp.; L. diminuta, *Smith*; Diacamma vagans, *Smith*. *Myrmicidæ* (fifteen species).—Crematogaster Rothneyi, *Mayr*, n. sp.;

Hypoclinea gracilipes, *Mayr.;* H. excisa, *Mayr.;* Holcomyrmex indicus, *Mayr.*, n. gen. & sp.; Pheidolacanthinus lævifrons, *Mayr.*, n. sp.; Monomorium latnoda, *Mayr.;* Solenopsis geminata, *Fabr.;* Pheidologeton laboriosus, *Smith;* Pheidole javana, *Mayr.;* Typhlata tricarinata, *Mayr.*, n.sp.; T. brevicornis, *Mayr.*, n. sp.; Sima rufonigrum, *Jerdon;* S. atrata, *Smith;* S. carbonaria, *Smith;* Myrmicaria subcarinata, *Smith.* *Cryptoceridæ* (one species); Meranoplus bicolor, *Guer.*

Thus, there were nine new species, two of which were new genera, and the collection contained several others, apparently new, requiring further examination. Mr. Smith directed attention to the fact that Mr. Rothney had very carefully collected the sexes of the different species, which was of the utmost importance to Science. Mr. Rothney had also, in a most liberal manner, allowed Mr. Smith to select a complete series of specimens for the British Museum. Connected with Mr. Rothney's collection were also three examples of what appeared to be the ant, Sima rufonigrum, placed side by side; but on close examination one of them was found to be a spider of the genus Salticus, having its anterior legs purposely removed, causing it to present a striking resemblance to the ant, which, like it, inhabits trees.

Mr. William Cole exhibited some magnificent species of Bombycidæ collected by Dr. Seaman, near Pine Town, Port Natal.

Mr. Stevens remarked that a hybernated specimen of Vanessa Antiopa had been seen on Sunday last in a church at Redhill.

Papers read, &c.

Mr. Bates communicated "Descriptions of New Genera and Species of Geodephagous Coleoptera from China, founded principally on Collections made by Mr. George Lewis."

Mr. Albert Müller communicated the following notes:—

1. *Araeocerus coffeæ at Basle.*—"On the 29th of September, 1862, while attentively watching the unpacking of some freshly-imported bags of Java coffee, in a warehouse at Basle, a very lively specimen of this beetle came tumbling out of one of the bags. I secured it and kept it alive for some days. In a letter dated the 14th of March, 1873, which I have just received from my lynx-eyed friend Herr H. Knecht, of the same city, he tells me that he can now get this species in any quantity at Basle. It is well known that this species of Anthribidæ feeds in the larval state on raw coffee-berries; hence its introduction and capture in commercial emporia on the coasts of different continents need cause little surprise; but the two facts here recorded illustrate once more the indubitable axiom that insects living on merchandise are spread

chiefly along the main trade-route, and become acclimatised along their whole course, Basle being one of the chief markets where Central Europe stores and disposes of the purchases derived from Mediterranean and Atlantic ports."

2. *Tribolium ferrugineum in Ground-nuts.*—"In the summer of 1863 a cargo of ground-nuts (*Arachis hypogæa*) arrived in the port of London direct from Sierra Leone. On arrival the usual samples were drawn, when it turned out that the husks were riddled by countless holes, while the kernels were half eaten up by myriads of larvæ and imagines of Tribolium ferrugineum. So completely had they done their noisome work that in the numerous samples examined scarcely an intact kernel could be found. If a nut was opened the whole interior was often found to be converted into a living conglomerate of larvæ, pupæ and imagines of Tribolium, accompanied by the larvæ and perfect insects of a Rhizophagus preying on the former, the whole mass being wrapped up in a layer of cast-skins and excrement. As no purchaser could be found, owing to the deplorable state of the cargo, the work of destruction continued through the months of August, September and October, the owners being unwilling to take a considerably lower price than had been calculated upon. A fresh proof how the marketable value of an article can become reduced through delay and ignorance on the part of its owner."

Mr. Dunning read the following "Further Note on Atropos pulsatoria, with reference to Dr. Hagen and Mr. W. A. Lewis."

"There is on the table this evening an abstract of Mr. Lewis's paper, "On Dr. Hagen's treatment of Atropos pulsatoria and Termes fatidicum" (Proc. Ent. Soc. 1872, p. xl.), in answer to some remarks I made on the 4th November, 1872. If the Society is not weary of the subject, I should like to say a few words, and will be as brief as possible.

"Sympathising with Mr. Lewis in what I conceive to be the main purpose of his 'Discussion of the Law of Priority,' but feeling that a good cause ought not to be supported by a misrepresentation of facts, I ventured to point out what I considered, and still consider, to be an error on Mr. Lewis's part. And I certainly was sanguine enough to expect that when the mis-statement was pointed out, it would be at once withdrawn.

"However, Mr. Lewis does not see the matter in this light, and contends that he has made no error of the kind I supposed. He says that I have written in the language of apology only the same things which he has written in the language of fault-finding; that I have concluded he was under some misconception from failing to understand that he considers worthy of reprobation what I pass by as nothing; that I have come forward to justify Dr. Hagen for having published a Synopsis of the British Psocidæ without an investigation of the species.

"If this be a fair account of what I said, my meaning must have been very ill-expressed. I refer to Proc. Ent. Soc. 1872, p. xxxiv., for what I did say, and will only add that I lent Mr. Lewis the MS. of my paper to prepare his reply. If the above be his understanding of what I have written, I can scarcely feel surprised that he has misrepresented Dr. Hagen.

"Mr. Lewis would have it appear that we are 'at difference not upon facts, but upon the importance attached to them.' The statements which I challenged were these—that 'the Atropos of 1861 is the Clothilla of 1865,' that 'the insect which [in 1861] had a bare back, 15-jointed antennæ, and thickened thighs, has now [*i. e.* in 1865] leather-like winglets, 27-jointed antennæ, and legs not thickened,' and that 'the same insect is described by Dr. Hagen twice over, on two adjoining pages, with opposite structural characters.' I say that these statements are erroneous; and if that is not a difference upon facts, I am at a loss to conceive what is.

"But how does Mr. Lewis meet my challenge? He says, 'Mr. Dunning proves that the Linnean name pulsatoria was in 1865 transferred to an insect of the genus Clothilla, while in 1861 it has represented an insect of the genus Atropos. Granted at once; and therefore the Atropos of 1861 *is* the Clothilla of 1865. The very same "pulsatoria, *Linné*," was in 1861 described as an Atropos, and was in 1865 described as a Clothilla.' Mr. Lewis must entertain a very low estimate of the intelligence of entomologists if he thinks they will be convinced by such a verbal quibble. Entomologists describe insects, and apply names to the insects; they do not describe names, and attach insects to the names. On two different occasions Dr. Hagen applied the same name to two different insects having opposite structural characters, on each occasion describing the two insects, and describing them as having opposite structural characters. And Mr. Lewis gravely contends that 'the same insect is described by Dr. Hagen twice over, on two adjoining pages, with opposite structural characters'! Because insect A with one set of characters was at one time called 'pulsatoria, *Linné*,' and insect B with another set of characters is at another time called 'pulsatoria, *Linné*,' therefore (says Mr. Lewis) the same insect is described twice over with opposite structural characters! It has never been my lot to encounter a more charming *Non sequitur*. And on this, and on this alone, Mr. Lewis has founded the charge of 'astonishing chicanery' of which Dr. Hagen is said to have been guilty.

"Mr. Lewis says that I have not answered the more important of his two cases, that the criticism impugned by me was based on two instances, but especially on that of Termes fatidicum, which is the climax to which Atropos pulsatoria was only a step. It is true I did not answer what Mr. Lewis said about Termes fatidicum; my object was to correct a specific misstatement, which related only to Atropos pulsatoria. On reference to the

'Discussion,' it will be seen that Dr. Hagen's treatment of T. fatidicum was a 'RIDICULOUS FARCE,' but his treatment of A. pulsatoria was 'astonishing chicanery.' To me the word 'chicanery' has an ugly sound; it was that word which offended my ear, and it was to the charge of chicanery that I addressed myself. And the charge then made as to A. pulsatoria having been (as I submit) refuted, Mr. Lewis now brings T. fatidicum to the front, and makes a lot of fresh charges based on Dr. Hagen's treatment of this insect, or if Mr. Lewis prefers it 'this supposed insect.' It is as if my learned friend were prosecuting a man (say) for bigamy, and after the defence has been heard, the prosecutor replies by attempting to show that the accused has at all events committed forgery! As before, I decline to discuss the 'FARCE,' preferring to attend to one thing at a time.

"Mr. Lewis goes on to say, 'It is the gist of my complaint that Dr. Hagen taught me in 1861 the exact opposite of what he taught me in 1865, though all the same materials were to his hand at the one time as at the other. *I* am in my turn surprised that Mr. Dunning should think this amounts to nothing.' Mr. Lewis's surprise is uncalled for; Mr. Dunning has neither said that this amounts to nothing, nor does he think so. The ground now alleged may or may not be a good ground of complaint against Dr. Hagen; but it is quite a different complaint from that which was made in the 'Discussion,' p. 54. The original objection was that the change of name ought not to have been made at all; the objection now is that Dr. Hagen ought to have known in 1861 the facts which induced him to make the change in 1865. 'The simple fact is that in 1861 Dr. Hagen published a Synopsis of the British Psocidæ without an investigation of the species. That is the back-bone of Mr. Dunning's remarks, and is, I presume, the thing he has come forward to justify.' Mr. Lewis presumes too much; I have not attempted to justify what Dr. Hagen actually did, much less have I come forward to justify what Mr. Lewis, without any personal knowledge of the circumstances, asserts to be 'the simple fact,' but which of my own knowledge I say is not a fact. If Mr. Lewis's simple fact is the back-bone of my remarks, the back-bone was very carefully extracted, and my remarks as delivered were invertebrate. Upon what authority, or supposed authority, it is stated that Dr. Hagen published his Synopsis of 1861 without an investigation of the species, I cannot conjecture. But if there be any question on this point, it is fortunate that there are still living several entomologists who can testify to the fact of the investigation having been made. In truth, Dr. Hagen came over to this country for the very purpose of studying the British species.

"That subsequent investigation has proved the existence of errors in the Synopsis of 1861 is perfectly true. But faulty as it was, it did good service in its day; and no one has more readily admitted its shortcomings and corrected its errors than Dr. Hagen himself. To my mind, readiness to

admit and correct one's own mistakes is praiseworthy, not blameworthy. I have no greater love for error than Mr. Lewis has, but I hope I am a little more tolerant of the mistakes of others than he is. All mistakes are to be regretted; but when made, and afterwards found out to be mistakes, surely the best thing is to correct them. It can scarcely be contended that no one should publish anything until there is a certainty of freedom from mistake: on this principle, what would the present state of Science have been? Certainly if Mr. Lewis had waited until he attained immunity from blunder, we should not have had the satisfaction of reading his 'Discussion' in the year of grace 1872."

Mr. Bates put some questions to the meeting, suggested to him by Mr. Darwin, with a view to eliciting information as to sexual differences in insects furnished with ocellated spots; and also as to sexual differences among the Buprestidæ. A conversation ensued, in which Mr. Jenner Weir stated that in Satyrus Hyperanthus the spots were more numerous in the female than in the male, and Mr. Butler remarked that Drusillus had double spots in one sex. It was also stated that Mr. Saunders had detected corresponding sexual differences in the Buprestidæ.

New Part of 'Transactions.'

Part V. of the 'Transactions' for 1872, completing the volume, was on the table.

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7 April, 1873.

H. T. Stainton, Esq., V.-P., in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1872, No. 3; presented by the Society. 'Annales de la Société Entomologique de Belgique,' tome xv.; by the Society. 'The Canadian Entomologist,' vol. v., no. 2; by the Editor. 'The American Naturalist,' vol. v., nos. 2—12, and vol. vi., nos. 1—11; by the Editor. 'Memoirs of the Peabody Academy of Science,' vol. i., nos. 2 and 3; and 'Fourth Annual Report of the Trustees of the Peabody Academy of Science for the year 1871;' by the Academy. 'Record of American Entomology for the year 1870;' by the Editor, A. S. Packard, jun., M.D. 'L'Abeille,' x., livr. 5 and 6; by the Editor. 'Exotic Butterflies,' part 86; by W. W. Saunders, Esq. 'Lepidoptera Exotica,' part 16; by E. W. Janson, Esq. 'Traité Elementaire d'Entomologie;' by the Author, M. Maurice Girard. 'The Entomologist' and the 'Zoologist' for April; by the Editor. 'The Entomologist's

Monthly Magazine' for April; by the Editors. 'Instructions for the Collection and Preservation of Neuropterous Insects,' by R. M'Lachlan, Esq., F.L.S.; presented by the Author. 'Bulletin de l'Académie Royale des Sciences, des Lettres et des Beaux Arts de Belgique,' t. xxxi.—xxxiv.; 'Memoires Couronnés et autres Memoires,' t. xxii.; by the Academy.

Election of Member.

Mr. Edward Cracroft Lefroy was balloted for and elected a Member of the Society.

Exhibitions, &c.

Mr. Champion exhibited specimens of Tribolium confusum and Ptinus testaceus, which he had observed in British collections mistaken for Tribolium testaceum and Ptinus fur.

Mr. Verrall exhibited a specimen of Laphria flava, *L.*, one of the Asilidæ, taken in Scotland, not having been hitherto discovered in this country. Also the following Syrphidæ, *viz.*:—Syrphus compositarum, *Ver.*, S. flavifrons, *Ver.*, and S. punctulatus, *Ver.*, all new species; together with S. annulatus, *Zett.*, S. barbifrons, *Fall.*, and S. nigricornis, *Ver.* (= obscurus, *Zett.*), the last three having been found in this country for the first time.

Mr. M'Lachlan stated that he had been informed by Lord Walsingham that when on his recent visit to California and Texas he had frequently noticed dragonflies preyed upon by other large insects whilst flying through the air. These latter were, no doubt, some species of Asilus; but it was the first time he had heard of dragonflies being preyed upon by other insects, as they had hitherto been supposed to be free from such attacks.

Mr. F. Smith remarked that when examining the box of insects sent to him from Calcutta, by Mr. Rothney, he had come upon a species of Pentatoma of a dull brown colour. Mr. Rothney stated that whilst seeking shelter under a tree from the sun, he observed the bark of the tree covered with hundreds of this species, which were of exactly the same colour as the bark, and on this account were not readily noticed. Mr. Smith was not aware why the insect should require this protection. Mr. Bates suggested that they might be subject to the attacks of lizards; but Mr. Meldola thought that it would be useful to them in attacking other insects, which they were occasionally known to do, although usually phytophagous in their habits.

Papers read, &c.

Major Parry communicated a paper on the "Characters of Seven Nondescript Lucanoid Coleoptera," with Remarks on the Genera Lissotes, Nigidius and Figulus."

Mr. Frederick Bates communicated "Descriptions of New Genera and Species of Tenebrionidæ from Australia, New Caledonia and Norfolk Island."

Mr. Albert Müller read the following remarks communicated to him in a letter from Mr. W. F. Bassett, of Waterbury, Connecticut, U.S.:—

"I found, early in the spring, almost as soon as the buds began to swell, large numbers of a female Cynips—the species unknown to me—ovipositing in these buds. I had seen the same in the two preceding seasons, but in only a few instances. The insect, standing on the summit of the bud, thrust the ovipositor down between the bud-scales, but did not in any case, so far as I noticed, penetrate the scales. I inferred that the eggs were laid in or on the embryo leaf. I marked several trees where I found these female flies, and watched with much interest to see what species, if any, would be found on them. I found the leaves, when developed, to contain galls of C. q.-futilis, *Osten-Sacken*, and with few if any other species intermixed; and the abundance of this species was in close agreement with the number of females ovipositing before the leaves appeared. These galls, when found at all, are usually very numerous, and on some of these trees there was hardly a leaf that did not contain from one to eight galls, each of which would produce from three to five insects. The fly of C. q.-futilis *(found in both sexes)* is much smaller than the species I found ovipositing. I think that when we come to find out the true history of these dimorphous and, in one generation, unisexual species, we shall find that those composing the generation of females are generally larger, and perhaps structurally distinct from the bisexual brood. What form of gall these apparently immediate progenitors of C. q.-futilis may come from I cannot say, though I still hope to trace them to their gall.

"I repeated last spring the experiment tried several previous seasons,—that of raising a brood of flies from the galls found in the form of irregular swellings on the twigs of an oak growing near my residence. I raised an immense number, all of which were females; and in June I reared still greater numbers, male and female, from enormously swollen petioles of leaves of the same tree. These two broods are remarkably alike, so much so that I could not separate them if mixed. There is, in this instance, no perceptible difference in the size of the individuals composing the two broods.

"It seems to me to be settled now that most, if not all, our species of Cynips are double-brooded, and that one of these generations consists of females only. Besides the two cases I have mentioned, where the connexion between the two broods is apparently well established, there are so many one-gendered species that we may reasonably suppose each to be the progenitor of some one of the equally numerous doubled-gendered species, but whose relationships have not yet been observed. I am willing to venture the remark that probably no one-gendered species exists—that those apparently unisexual species, C. q.-punctata, *Bassett*, C. q.-spongifica, *Osten-Sacken*, and those European species which, though reared in countless numbers,

have as yet been found only in the female sex, will be found to be double-brooded species, one of which will be exclusively female and the other male and female.

"I have two or three years tried to raise a colony of C. q.-punctata, *Bassett*, by placing the large polythalamous galls on uninfected trees just as the insects were ready to escape. So far I have failed to rear any galls of this species. Now if these females really reproduce the same kind of gall I ought to have succeeded, for I colonized several hundred individuals on a single small tree, and many more on other trees in different seasons. Of course the inference to be drawn from the failure of my attempt to raise these galls has no scientific value, but had I succeeded in raising the galls the fact would have been received as satisfactory proof that these female flies could produce generation after generation of females without the aid of the male element.

"I take the ground that the reproduction of gall-insects without the intervention of the male is limited to a very few, if not even to one generation; and that all our unisexual species are dimorphic forms of double-gendered species. I wish yourself and all others interested in working out the singular history of this family would give attention to these points. And may I ask you to inform me if anything has been written within a year or two that throws any light upon them, as I am aware that my non-intercourse with the entomologic world for a year or two past has left me far behind possibly on this very point.

"I was able last spring to settle, to my own satisfaction at least, a question raised by myself in the first article I published on the Cynipidæ,—the question whether the woolly galls, C. q.-seminator, *Harris*, and C. q.-operator, *Osten-Sacken*, were or were not abnormally developed leaves. I took the ground that they were, that the eggs were deposited in the oak-bud, that the small seed-like gall was only a modified leaf-stem and blade, and that the wool was only an enormous development of the pubescence always present on the young leaves. Mr. B. D. Walsh opposed this idea, and, either in a published paper or in a letter to me, denied that the gall had any connexion whatever with the bud or leaves. Last spring I was so fortunate as to find two galls of C. q.-seminator in their earliest stage, and was able to watch them in their development. They are really developed from buds, and are, as I supposed, only modified leaves. The smooth shining cell or gall is the petiole of the leaf, and the tuft of long woolly hairs that terminates the cell is only the enormous development of the leaf's pubescence."

New Part of 'Transactions.'

Part I. of the 'Transactions' for 1873 was on the table.

APR 30 1874

5 May, 1873.

H. T. Stainton, F.R.S., &c., Vice-President in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 143; presented by the Society. 'Verhandlungen der Kaiserlich-Königlichen zoologisch-botanischen Gesellschaft in Wien,' vol. xxii.; by the Society. 'Tijdschrift voor Entomologie, uitgegeven door de Nederlandsche Entomologische Vereeniging,' 2nd series, vol. vii.; by the Society. 'Mémoires de la Société Linnéenne de Normandie,' vols. xv. & xvi., and 'Bulletin de la Société Linnéenne de Normandie,' ser. 2, vol. v.; by the Society. 'Report of the Entomological Society of Ontario,' 1872; by the Society. 'Local Biology; followed by Remarks on the Faunas of Bath and Somerset,' by the Rev. Leonard Blomefield, M.A., F.L.S., F.G.S., &c.; by the Author. 'The Canadian Entomologist,' vol. v. no. 3; by the Editor. 'The Zoologist' and 'Newman's Entomologist' for May; by the Editor. 'The Entomologist's Monthly Magazine' for May; by the Editors. 'Cistula Entomologica,' pars vi.; by E. W. Janson. 'Notice Biographique sur M. Guillaume-Antoine Olivier, Membre de l'Institut de la Société d'Agriculture de Paris, par A. F. Silvestre, Membre de l'Institut et Secrétaire perpétuel de la Société d'Agriculture; lue à la Séance publique de la Société d'Agriculture, le 9 Avril, 1815;' by M. Ernest Olivier. 'Stettiner Entomologische Zeitung,' xxxiv., nos. 4—6; by the Entomological Society of Stettin.

By purchase:—'Catalogus Coleopterorum,' tom. ix., pars ii.

Election of Member.

The Marquis Giacomo Doria, of Genoa, was balloted for and elected a Foreign Member of the Society.

Exhibitions, &c.

Mr. Higgins exhibited a specimen of a remarkable insect recently described by Mr. F. Moore under the name of Langia zeuzeroides (said to pertain to the Sphingidæ). It was from the Himalayas, and had been bred by Major Buckley from a larva feeding on wild apricot. He also exhibited a female specimen of Goliathus albosignatus (Kirkii, *Westw.*), from the Limpopo, being, as he considered, the only known example of that sex.

Mr. M'Lachlan exhibited a coloured plate of butterflies from Turkestan. This he had been requested to show to English entomologists, as a sample of the manner in which the forthcoming work on the Natural History of Turkestan is to be illustrated. The entomological collections had been chiefly made by M. Alexis Fedtschenko during the years 1869—71. The

work is to be published in the Russian language, with Latin diagnoses of the new species.

Mr. Bates alluded to an insect figured in the plate as Colias Nastes, *var.* Cocandica. C. Nastes had, hitherto, only been found in Lapland (*var.* Werdandi) and in Labrador and Arctic America, and it was a striking instance of the manner in which some species inhabiting the Arctic regions are found southwards in mountainous districts, though not in the intervening plains. He mentioned also that Colias Palæno was found near the snow-line in the Alps, and in Lapland.

Mr. Müller said that he felt much interested in the remarks offered by Mr. Bates, as they confirmed his own conclusions, concerning the very close connection, or perhaps even identity, between the Arctic and the Alpine insect-faunas. He referred to one remarkable instance, namely, to the Genus Parnassius, and in particular to P. Apollo, which occurred in most parts of Northern Europe and Asia; but which in Central Europe—*i.e.* in Switzerland—was confined to the Alps and the opposite Jurassian range, carefully avoiding the intervening alluvial plains, which in the glacial period had been covered by the glaciers of the Rhone, the Reuss, the Rhine, and minor tributaries. He added that if the actual stations of the species were mapped they would all be found to exist outside, but along the moraines left by the ancient glaciers; and that the same was the case with Delius and Mnemosyne.

Mr. Albert Müller was desirous of making some inquiry concerning the literary remains of an entomologist. It was mentioned by Markus Lutz, of Basle, in his 'Moderne Biographien' (Lichtenstieg, 1826, pp. 39—40), that Johann Samuel Clemens, a native of Chambéry, in Savoy, was a clergyman in the Val d'Illies (Lower Valais), and that he was a learned naturalist. He is said to have formed a library of 8000 volumes, an herbarium, a collection of minerals and insects of the country; and is reported to have committed to paper many good observations concerning the Natural History of the Valais, none of which seem to have been published. He is said to have died in 1812. Mr. Müller said that he would be thankful to any Italian, French or Swiss entomologist who might be able to give information concerning the manuscripts of this divine, either by letter to himself or through any entomological publication.

Mr. Stainton exhibited a cocoon found by Mr. A. H. Swinton in the crevice of a wall at Kilburn. Its surface was smooth and extremely hard, and it had an oval opening at one end. Mr. M'Lachlan considered that it was an ancient cocoon of Cerura vinula, altered in texture and surface in consequence of the larva having had to construct it on a wall instead of on a tree-trunk.

Papers read, &c.

Dr. Sharp communicated a paper on "The Staphylinidæ of Japan," principally from the collection of Mr. George Lewis.

A paper was read entitled "Notes on the Ephemeridæ," by Dr. H. A. Hagen, compiled by the Rev. A. E. Eaton, M.A.

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2 June, 1873.

Sir Sidney S. Saunders, Vice-President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Bulletin of the Buffalo Society of Natural Sciences,' vol. i. no. 1; presented by the Society. 'Bullettino della Società Entomologica Italiana,' vol. v. trim. 1; by the Society. 'The Journal of the Quekett Microscopical Club,' nos. 20, 21 and 22; by the Club. 'Fifth Annual Report on the Noxious, Beneficial and other Insects of the State of Missouri,' by Charles V. Riley; by the Author. 'Beiträge zur Kenntniss der Dipterenfauna Galiziens,' von Dr. Max. Nowicki; by the Author. 'Les Papillons Diurnes de Belgique, Manuel du jeune Lépidoptérologiste,' par Louis Quaedvlieg; by the Author. 'West Kent Natural History, Microscopical and Photographic Society: the President's Address; the Council and Auditors' Reports for 1872; and a Lecture on the Aquarium and its Contents, delivered in the Crystal Palace, by J. Jenner Weir, Esq., President, at the Soirée, November 6, 1872;' by the Society. 'Note sur les Genus Peribleptus, *Sch.*, Paipalesomus, *Sch.*, et Paipalephorus, *Jekel*,' par M. H. Jekel; by the Author. 'The Zoologist' and 'Entomologist' for June; by the Editor. 'The Entomologist's Monthly Magazine' for June; by the Editors.

Exhibitions, &c.

Mr. Bond brought to the meeting some seeds of Gleditschia Sinensis, received from Japan, which were all destroyed by a species of Bruchus, of which he exhibited living specimens.

Mr. Müller exhibited a Psyche case sent by Mr. Rothney from Calcutta. It was composed of the spines of some tree arranged longitudinally, so that the points were all at the upper end.

Sir Sidney Saunders exhibited a series of living Hymenopterous larvæ and pupæ in briar-stems, lately received from Albania. These briars having been recently split, showed the occupants in their natural cells. Specimens of the perfect insects reared from the larvæ were also exhibited, consisting of the following:—Trypoxylon figulus, *Smith;* Raphiglossa Eumenoides, *Saunders;* Psiliglossa (Stenoglossa, *Sauss.*) Odyneroides, *Saund.;* Odynerus lævipes, *Shuck.;* Prosopis rubicola, *Saund.*; Osmia tridentata, *Duf. & Perris;* and O. leucomelana, *Kirb.*

Mr. Müller communicated the following notes on the discovery, by Dr. Emile Joly, of Toulouse, of a nymph which he announced to belong to a species of Oligoneuria:—

"Having for the last fifteen years endeavoured to find the unknown early conditions of Oligoneuria Rhenana, *Imhoff*, but so far without success, it is a matter of no little consolation to me to be enabled, through the courtesy of my valued friend Dr. Emile Joly, to announce, on his behalf, to the Society, his important discovery of the first nymph known in the genus Oligoneuria, and belonging to the species named by him 'Garumnica.' For this purpose I translate here Dr. Joly's communication from the French MSS., agreeably to his desire. My friend writes, 'I have the honour of addressing to the Entomological Society of London two drawings, to my knowledge entirely unpublished, and representing (fig. A), the upper side,*

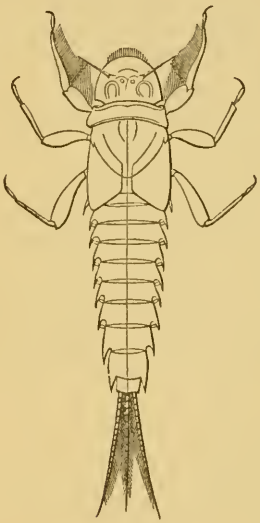


Fig. A.

Fig. B.

(The above are three times the natural length.)

* This nymph, like the one of Palingenia Roeselii (*vide* Mém. de la Soc. des Sci. Nat. de Cherbourg, t. xvi.), with long ciliæ only on the internal border of the anterior legs, presents, like the last, above the thorax and in pairs overlying each other, *four* corneous sheaths intended to lodge the folded-back (repliées) wings of the insect up to the moment of its passing to the subimago state. It is therefore not, as Imhoff supposed, by a kind of division, by a spontaneous fissuring, that the four wings are formed, which are so easily recognised in the imago state of the insect, but rather that if sometimes there seem to exist only two wings, it is, as Hagen had at first deduced theoretically, because there exists a perfect attachment by simple agglutination of the posterior border of the fore wing to the anterior border of the hind wing.

and (fig. B) the under side of the nymph of a new species of Oligoneuria, for which I have already proposed the specific name "Garumnica."* In 1869, on the very last excursion which I had the opportunity of making in the bassin of the Garonne at Toulouse, I had the good luck of detecting the singular metamorphoses of this species. In all probability this nymph is the first and only one discovered in this genus up to the present time, as neither Pictet, the founder of the genus (O. anomala), nor Imhoff (O. Rhenana), nor Hagen (O. Rhenana, *var.* pallida), nor my friend Albert Müller in his different observations on the habits of O. Rhenana, nor M'Lachlan (O. Trimeniana), nor lastly, even the Rev. A. E. Eaton, in his fine and quite recently published monograph on the Ephemeridæ,† mention anything concerning the larval stage *(l'état de ver)*, or, as it is called in England, "the immature condition of the subaqueous stages of development," of any of the species, the names of which I have enumerated. I intend to publish shortly the complete anatomy of this curious nymph.'"

With regard to the above notes, Mr. M'Lachlan remarked that it would be most desirable to obtain further and more minute particulars respecting Dr. Joly's observations. The information furnished was very vague, and no characters were given of the supposed new species.

Mr. Wollaston communicated a paper "On the Genera of the Cossonidæ," including descriptions of 139 species which had not hitherto been recorded.

The Secretary read the following remarks, communicated to him in a letter from Mr. Roland Trimen, of Cape Town:—

"I have lately read with much interest the Rev. R. P. Murray's notes 'On some Variations of Neuration observed in certain Papilionidæ,'‡ and desire to offer the following remarks thereon. In cases 1, 2, 3 and 4, Mr. Murray does not state whether the anastomosing or coalescing nervures are those of the fore or hind wings; but in the 1st and 2nd, it is clear, from the mention of Synchloë (Pieris) Mesentina, *Cramer*, that the fore wings are intended. In this Pieride, however, the junction of the first subcostal nervule with the costal nervure of the fore wings is not an aberration but a constant character of that species, as well as of P. Severina, *Cram.*, and a few allied species, and (as mentioned by me in Trans. Ent. Soc. 1870, p. 378) has been noticed by both Wallengren and Wallace.

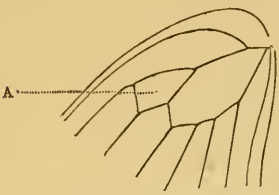
"I am enabled to supplement case 5, 'P. Clodias' (? Parnassius Clodius, *Mén.*), by a very similar and even more remarkable instance in a male Papilio Merope, *Cram.*, which has just recently come under my notice. As in Mr. Murray's description, the subcostal nervules of the hind wing in this

* Emile Joly, 1870, "Contributions pour servir à l'Histoire Naturelle des Ephémérines," No. 1, in t. iv. du Bull. de la Soc. d'Hist. Nat. de Toulouse, avec Planche.

† A. E. Eaton, "A Monograph on the Ephemeridæ," in Trans. Ent. Soc. Lond., 1871, with six plates.

‡ Proc. Ent. Soc., 1872, pp. xxxiii.—xxxiv.

specimen of Merope are connected by a transverse nervule; but the additional nervule (instead of being incomplete and confined to the right hind wing) is found in both hind wings and thoroughly unites the subcostal nervules. In this manner a perfect additional cell is formed (see A in figure) immediately adjoining and above the ordinary discoidal cell, and extending beyond it. The subcostal nervules are 'angulated and drawn together' by the transverse nervule, quite as Mr. Murray describes in P. Clodius, and the additional cell is of the same size and shape in both hind wings. It is observable that the true discoidal cell is not at all distorted, but of the normal size and form in both hind wings. This interesting example of P. Merope was taken by Mr. J. H. Bowker on the Boolo River, a small tributary of the Tsomo, in Kaffraria Proper.



"I have in another place (Trans. Linn. Soc., vol. xxvi. p. 501, note) commented on the remarkable neuration of the Papilionidæ, and pointed out how the presence of more than one cell enclosed by anastomosing nervures constitutes an indication of affinity to the Heterocerous groups of Lepidoptera; and this indication acquires additional significance in view of the interesting facts recorded by Mr. Murray respecting butterflies of this family, and of the circumstance of the tendency to form additional wing-cells finding such marked development in the specimen of P. Merope above described. There can, I think, be little doubt that (as Mr. Murray suggests in reference to the pre-discoidal cell discovered in some examples of Thais Polyxena, *W. V.*) these exceptional cases of neuration are referable to reversion to ancestral characters, and point to a remote community of origin between the Papilionidæ and the higher Heterocera.

"In my discussion (*loc. cit.*, pp. 501–2) of this question of the position of the Papilionidæ, I overlooked Boisduval's account (Faune Ent. de Madag., &c., pp. 6 and 113) of the larva of the splendid Urania Rhipheus, or I should not have quoted Cerura as affording the *only* other instance among the Lepidoptera of organs analogous to the Y-shaped tentacle of the Papilionide caterpillars. Boisduval states particularly (on the authority of Captain Sganzin, who reared a large number of the Urania) that the larva of Rhipheus possesses, '*comme dans les Papilio*,' '*deux cornes rétractiles, roses, placées sur le premier anneau*,' adding that it exserts them at will ('fait sortir à volonté'). Mr. Wallace, not only in his paper on Malayan Papilionidæ (Trans. Linn. Soc., vol. xxv.), but more recently in his valuable 'Contributions to the Theory of Natural Selection,' 2nd edit. 1871, has laid such stress on the possession of the exsertible Y-shaped organ being, as the *exclusive* character of Papilionide larvæ, a sign of the highest development of the Lepidopterous Order, that the presence of an apparently identical

organ in the undoubtedly Heterocerous Urania is a fact most worthy of special notice.

"PS.—I add a line to say that I have just heard (24th April) that proof of the species-identity of Papilio Merope and Ps. Cenea, Hippocoon and Trophonius has been obtained by Mr. Mansel Weale, who has reared them all from larvæ found on Vepris lanceolata. I hope to give full particulars shortly."

New Part of 'Transactions.'

Part ii. of the 'Transactions' for 1873 was on the table.

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7 July, 1873.

Henry T. Stainton, Esq., F.R.S., &c., Vice-President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'The Proceedings of the Royal Society,' No. 144; presented by the Society. 'Proceedings of the Scientific Meetings of the Zoological Society of London, 1872,' pt. 3; by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou, 1872,' No. 4; by the Society. 'Annales de la Société Entomologique de France,' 4e Sér., tome x. (Partie Supplementaire, Famille des Eucnémides 2e & 3e Cahiers), 5e Sér., tome ii.; by the Society. 'Illustrations of North-American Entomology (United States and Canada),' by Townend Glover, Washington, D.C.—Orthoptera; by the Author. 'De Skandinaviske og Arktiske Amphipoder beskrevne,' af Axel Boeck; by the Author. 'Exotic Butterflies,' part 87; by W. Wilson Saunders, Esq. 'Lepidoptera Exotica,' part xvii.; by E. W. Janson. 'Catalogue of the Specimens of Hemiptera Heteroptera in the Collection of the British Museum,' parts vi. and vii., by Francis Walker; by the Trustees of the British Museum. 'General List of the Spiders of Palestine and Syria, with Descriptions of numerous new Species and Characters of two new Genera;' 'Descriptions of Twenty-four new Species of Erigone;' by the Author, the Rev. O. P.-Cambridge, M.A., C.M.Z.S. 'The Butterflies and Moths of Canada, with Descriptions of their Colour, Size and Habits, and the Food and Metamorphosis of their Larvæ;' by the Author, Alexander Milton Ross, M.D., &c. 'La Teigne du Pommier;' by the Author, M. A. Guenée. 'Anteckningar til Lapplands Coleopter-Fauna,' af John Sahlberg; by the Author. 'Bidrag til Norges Insektfauna,' af H. Siebke; by the Author. 'Carcinologiske Bidrag til Norges Fauna: I. Monographi over de ved Norges Kyster forekommen de Mysider, Andit Hefte:' 'Diagnoser af nye Annelider fra Christianiafjorden, efter Professor M. Sars's efterladte Manuskripter;' 'Undersgelser over Hardangerfjordens Fauna; I. Crustacea;' 'Bidrag til Kundskaben om Christianiafjordens Fauna: III. Vaesentlig udarbeidet efter

Prof. Dr. M. Sars's efterladte Manuskripter;' by the Author, G. O. Sars. 'The Canadian Entomologist,' vol. v., nos. 4 and 5; by the Editor. 'Newman's Entomologist' and 'The Zoologist' for July; by the Editor. 'The Entomologist's Monthly Magazine' for July; by the Editors. 'On Nephropsis Stewarti, a new Genus and Species of Macrurous Crustaceans dredged in deep water off the eastern coast of the Andaman Islands;' 'On new or little known Species of Phasmidæ, part I. Genus Bacillus;' by the Author, James Wood Mason, Esq.

Exhibitions, &c.

Mr. Weir exhibited eight examples of Agrotera nemoralis, taken by him in June at Abbot's Wood, near Lewes. They were observed only in the thickest parts of the wood.

Prof. Westwood sent copies of two parts of his forthcoming 'Thesaurus Entomologicus Oxoniensis.'

Mr. Bond exhibited larvæ of the Bruchus from Japan brought to the last meeting. The species was apparently undescribed, and would be included in the paper on Japanese Curculionidæ, prepared (for the Belgian 'Annales') by M. Roelofs.

Mr. M'Lachlan exhibited a strongly-marked instance of gynandromorphism in a Dipterous insect (one of the Syrphidæ) taken by him at Black Park.

Mr. Müller exhibited a number of small galls found by Mr. Trovey Blackmore on the under side of a broad-leaved species of oak growing near Tangier: they were probably formed by a species of Neuroterus. Mr. Blackmore also exhibited some large galls found on the same species of oak, which had been taken possession of by an ant (Crematogaster scutellaris, *Oliv.*). Mr. Smith remarked that the common oak-apple in this country was sometimes taken possession of, in a similar manner, by a species of Osmia.

Mr. W. B. Pryer exhibited a selection from his captures of Lepidoptera from China.

Papers read, &c.

Sir Sidney Saunders communicated a paper, "On the Habits and Economy of certain Hymenopterous Insects which nidificate in Briars, and their Parasites." The insects were exhibited at the last meeting, and Sir Sidney further exhibited a specimen of a Raphiglossa, in illustration of the remarkable position of the insect during repose. It was attached by its mandibles to a thorn, from which it extended horizontally, without any further support, the legs being uppermost. Mr. F. Smith reminded the meeting that an analogous habit had been recorded concerning Chelostoma florisomne, and the individuals observed were invariably males.

Mr. Butler communicated a paper on the species of Galeodides, with description of a new species in the British Museum.

APR 30 1874

17th November, 1873.

Prof. Westwood, M.A., F.L.S., President, in the chair.

This being the first Meeting of the Session, the President adverted to the recent vote of the Council of the Linnean Society, by which they kindly granted the use of their meeting-room to the Members of this Society during the present Session. It was resolved that the thanks of the Members be conveyed to the Council of the Linnean Society.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'The Transactions of the Linnean Society of London,' vol. xxviii. pt. 3; vol. xxix. pt. 2; Proceedings, Session 1872—73; presented by the Society. 'Mémoires de la Société de Physique et d'Histoire Naturelle de Genève,' t. xxii. and xxiii. pt. 1; by the Society. 'Annales de la Société Linnéenne de Lyon, Année 1872;' by the Society. 'Annali del Museo civico di Storia naturale di Genova publicati per curu di Giacomo Doria,' tome i.—iii.; by the Museum. 'Proceedings of the Royal Society,' nos. 145 and 146; by the Society. 'Bulletino della Società Entomologica Italiana,' t. v. trim. 2 and 3; by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou, Année 1873,' No. 1; by the Society. 'The Journal of the Quekett Microscopical Club,' No. 24; by the Club. 'Coleopterologische Hefte,' pt. xi.; by the Editor, Baron E. v. Harold. 'Cistula Entomologica,' pars vii.; by E. W. Janson. 'The Canadian Entomologist,' vol. v. nos. 6—9; by the Editor. 'The Entomologist's Monthly Magazine' for August—November; by the Editors. 'The Zoologist' and 'Newman's Entomologist' for August—November; by the Editor. 'L'Abeille, 1873,' livr. 7—11; by the Editor. 'Iconographie et Description de Chenilles et Lépidoptères inédits,' par P. Millière, tome iii. livr. 30—33; by J. W. Dunning, Esq. 'Remarks on Synonyms of European Spiders,' No. 4; by the Author, T. Thorell. 'Lepidoptera Exotica, or Descriptions and Illustrations of Exotic Lepidoptera,' by Arthur Gardiner Butler, F.L.S., &c., pt. xviii.; by E. W. Janson. 'Exotic Butterflies,' part 88. 'The Transactions of the Entomological Society of New South Wales,' vol. ii. pt. 5; by the Society. 'Stettiner Entomologische Zeitung,' vol. xxxiv. nos. 7—9; by the Entomological Society of Stettin. 'The Natural History of the Tineina,' vol. xiii.; by the Author, H. T. Stainton, Esq. 'Mémoire sur les Cléonides;' 'Description de quelques espèces nouvelles de Coléoptères de Syrie;' by the

Author, M. A. Chevrolat. 'L'Attacus Atlas le Géant des Papillons, son Introduction en France, par M. A. Braine; son Histoire et son Habitat, par M. Maurice Girard;' 'Etudes sur les Insectes Carnassiers utiles à introduire dans les Jardins et à Protèger contre la Destruction,' par M. Maurice Girard; by M. Girard. 'Ueber Parthenogenesis der Artemia salina;' by the Author, C. v. Siebold. 'Contributions to Entomological Bibliography up to 1862,' no. 2; by the Author, Albert Müller, Esq. 'Troisièmes Additions au Synopsis des Gomphines;' 'Troisièmes Additions au Synopsis des Caloptérygines;' by the Author, M. E. de Selys-Longchamps. 'A Catalogue of the Neuropterous Insects of New Zealand, with Notes and Descriptions of New Forms;' by the Author, R. M'Lachlan, Esq. 'The Ancestry of Insects: Chapter XIII. of "Our Common Insects;"' by the Author, A. S. Packard, jun. 'The Gall Midge of the Yew (*Cecidomyia Taxi*, Inchbald);' 'Apion apricans, *Herbst*, a Weevil injurious in the Kitchen Garden;' 'Review of the Take-all (the Corn Disease of Australia), scientifically considered, by Dr. Carl Mücke: Prize Essay, published under the authority of the Board of Agriculture of Victoria, Melbourne, 1870;' by the Author, Albert Müller, Esq. 'On the Amount of Substance-waste undergone by Insects in the Pupal State; with Remarks on Papilio Ajax,' by Raphael Meldola, F.C.S.; by the Author. 'Synopsis of the Histeridæ of the United States;' 'Revision of the Genera of the Tribe Hydrobiini;' 'Revision of the Species of several Genera of Meloidæ of the United States;' by the Author, George H. Horn, M.D. 'Descriptions of North-American Noctuidæ,' no. 3, by Aug. R. Grote; by the Author. 'A Contribution towards a Monograph of the Indian Passalidæ,' by Dr. F. Stoliczka: by the Author. 'On Rhopalorhynchus Kröyeri, a new Genus and Species of Pycnogonida;' 'Note on certain Species of Phasmidæ hitherto referred to the Genus Bacillus;' by the Author, James Wood Mason, Esq. 'Mittheilungen der Schweizerischen Entomologischen Gesellschaft,' vol. iv. nos. 1 and 2; by the Society.

By purchase:—'Hymenoptera Scandinaviæ,' auctore C. G. Thomson, tom. ii. 'Bericht ueber die wissenschaftlichen Leishingen im Gebicte der Entomologie wähund des Jahres 1870, von Friedrich Brauer, und wâhund der Jahre 1869 und 1870, von Dr. A. Gerstaecker.' 'Die Cetoniden der Philippinischen Inseln,' Beschrieben von Dr. Otto Mohnike.

Election of Member.

Mr. C. W. Dale, of Glanville's Wootton, Dorsetshire, was balloted for and elected a Member of the Society.

Exhibitions, &c.

Mr. Higgins exhibited two bred specimens of Deilephila Euphorbiæ (one a remarkable variety), and a Sphinx Pinastri, taken near Harwich

in June, 1872, when several specimens of the former were found in the larva state.

Mr. Champion exhibited a bred specimen of Pachnobia alpina from Braemar; also Harpalus quadripunctatus, *Dej.*, from Braemar; Anisotoma macropus, *Rye*, from Claremont; A. pallens, *Germ.*, from Deal; Liosomus troglodytes, *Rye*, from Faversham; and L. oblongulus, *Boh.*, from Caterham.

Mr. W. C. Boyd exhibited living larvæ of Brachycentrus subnubilus, which had been reared from the eggs. They fed upon Confervæ, and the cases constructed by them were clearly quadrangular (though the angles were not prominent), and very diaphanous, so that the movements of the larvæ could be discerned within.

Mr. Bond exhibited fine specimens of Chilo gigantellus from Horning Fen.

Mr. Vaughan exhibited Pempelia Davisella reared from larvæ, feeding in a web, upon shoots of Ulex.

Mr. Stevens exhibited Leucania L-album and Cerastes erythrocephala, said to have been taken at Canterbury by Mr. G. Parry. Also Acontia solaris taken near Dover in 1872, and a curious variety of Arge Galathea taken in 1871 on the South coast.

Mr. Müller remarked that at a meeting of the Scientific Committee of the Royal Horticultural Society, on the 12th instant, Dr. Masters had exhibited some galls found at Wimbledon on the roots of Deodara. That gentleman had since submitted to him further specimens of this gall, which he had found to agree, in external and internal structure, with those of Biorhiza aptera, *Fab.*, usually occurring on roots of oak. Mr. Müller stated that he had since bred several specimens of Biorhiza aptera from these Deodara galls, and that he believed it to be the first instance where a true Cynips had been known to transfer its attacks from oak to a species of Conifer.

Papers read, &c.

Mr. W. H. Miskin, of Queensland, communicated some remarks on Mynes Guerini, described by Mr. A. R. Wallace in the 'Transactions of the Entomological Society,' 1869, p. 77, but which he considered to be identical with Mynes Geoffroyi, *Guer.*, from the Malayan islands. He alluded to a singular peculiarity in the economy of the insect, namely, that the larvæ, which were gregarious in their habits, preserved their social instincts even to their assuming the pupa state—the chrysalides being found collected together in groups of three or four individuals, united at the tails.

A paper was read entitled "Notes on the Habits of Papilio Merope, with a Description of its Larva and Pupa," by J. P. Mansel Weale, B.A.

Mr. Roland Trimen communicated some "Observations on Papilio Merope, *Auct.*, with an Account of the various known Forms of that Butterfly."

Mr. E. W. Janson announced the approaching visit to this country of Dr. G. H. Horn, the well-known Coleopterist from Philadelphia.

1st December, 1873.

H. T. Stainton, F.R.S., &c., Vice-President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Berliner Entomologische Zeitschrift,' 1873, 1—2; presented by the Society. 'Beitrag zur Lepidopteren-Fauna Transkaukasiens und Beschreibung Zwei neuer Arten;' by the Author, Gustav von Emich. 'The Object and Method of Zoological Nomenclature;' by the Author, David Sharp, M.B. 'Contributions to Entomological Bibliography up to 1862,' No. 3; 'Review of the "Fifth Annual Report on the Noxious, Beneficial and other Insects of the State of Missouri, made to the State Board of Agriculture, pursuant to an Appropriation for this purpose from the Legislature of the State," by Charles V. Riley, State Entomologist, Jefferson City, 1873;' by the Author, Albert Müller. 'The Entomologist's Monthly Magazine' for December; by the Editors. 'Newman's Entomologist' and 'The Zoologist' for December; by the Editor. 'Stettiner Entomologische Zeitung, 1873,' Nos. 10—12; by the Society.

By purchase:—'Beschreibungen europäischer Dipteren,' Band iii.

Election of Member, &c.

Mr. Frederick Newell Arber, of Islip, Northamptonshire, was balloted for and elected a Member of the Society.

Mr. John George Marsh, of 842, Old Kent-road, was balloted for and elected a Subscriber to the Society.

Exhibitions, &c.

Mr. Bond exhibited a hybrid specimen between Clostera curtula and C. reclusa, partaking of the characters of both parents.

Mr. Jenner Weir exhibited specimens of a minute Hymenopterous insect (a species of Psen), which he had observed in large numbers (probably 150)

in June last, on a pear-leaf at Lewes. They had congregated together on the surface of the leaf like a swarm of bees, though it was not apparent what motive brought them together.

Mr. Dunning read some portions of a letter which he had received from Mr. Nottidge, enclosing the Eighth Report of the Canterbury (New Zealand) Acclimatization Society, and stating that the red clover had been introduced into the colony, but that they had no humble bees to fertilize the plant. Also that certain Lepidopterous insects had been accidentally imported into the islands, but that the corresponding ichneumons were wanted to keep down their numbers. He would be glad of any suggestions as to the best mode of introducing both humble bees and ichneumons into the colony, as might be requisite. It was suggested that by procuring a sufficient number of humble bees in a dormant condition and keeping them in this state (by means of ice) during the voyage the result might be attained. Mr. M'Lachlan mentioned that he had received a letter from Capt. Hutton from the same colony, stating that indigenous Aphides did not, apparently, exist there, but imported species were becoming very destructive, and he asked if it would be possible to introduce Chrysopa.

Papers read, &c.

Mr. Baly communicated a paper on the Phytophagous Coleoptera of Japan, being a continuation of that contained in the 'Transactions' of the Society for 1873, p. 69.

Mr. Bates contributed a paper on the Longicorn beetles recently brought home by Mr. Thomas Belt from Chontales, Nicaragua, being supplementary to that published in the 'Transactions of the Entomological Society' for 1872, p. 163. The additional species amounted to thirty-seven, which, with those enumerated in the previous paper, brought up the total number to 309. Mr. Bates remarked that a work by Mr. Belt would shortly be published on Nicaragua, which he believed would be of much interest to entomologists.

Mr. W. H. Miskin, of Queensland, communicated criticisms on a Catalogue of the described species of Diurnal Lepidoptera of Australia, by Mr. George Masters, of the Sydney Museum.

A fourth portion of the 'Catalogue of British Insects,' now being published by the Society, was on the table. It contained the Hymenoptera (Oxyura), compiled by the Rev. T. A. Marshall, M.A.

A Prospectus was on the table of a Scientific Societies Club, which it was proposed to establish in the neighbourhood of Burlington House.

5th January, 1874.

Prof. Westwood, M.A., F.L.S., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 147; presented by the Society. 'Bulletin de la Société Impériale des Naturalistes de Moscou, 1873,' No. 2; by the Society. 'Catalogue of the Specimens of Hemiptera Heteroptera in the Collection of the British Museum,' part viii., by Francis Walker; by the Trustees. 'On the Origin and Metamorphoses of Insects,' by the Author, Sir John Lubbock, Bart. 'Contributions to a Knowledge of the Curculionidæ of the United States;' by the Author, George H. Horn, M.D. 'Sixth Annual Report of the United States Geological Survey of the Territories embracing portions of Montana, Idaho, Wyoming and Utah; being a Report of Progress of the Explorations for the Year 1872,' by F. V. Hayden, United States Geologist; by the Author. 'Synopsis of the Acrididæ of North America,' by Cyrus Thomas, Ph.D.; by the Author. 'Exotic Butterflies,' part 89. 'Lepidoptera Exotica,' part xix., and 'Cistula Entomologica,' part viii.; by E. W. Janson. 'L'Abeille,' 1873, livr. x., and 1874, livr. i.; by the Editor. 'The Canadian Entomologist,' vol. v., nos. 10 and 11; by the Editor. 'The Entomologist's Magazine' for January; by the Editors. 'Newman's Entomologist' and 'The Zoologist' for January; by the Editor.

Election of Member.

Captain George Cockle, of 9, Bolton Gardens, was balloted for and elected a Member of the Society.

Exhibitions, &c.

Mr. Meldola exhibited some photographs of minute insects taken with the camera obscura and microscope.

Mr. M'Lachlan called attention to a paper in the last part of the 'Annales de la Société Entomologique de France,' by M. Bar and Dr. Laboulbène, on a species of the Bombycidæ closely related to the tiger-moths, described and figured by M. Bar as Palustra Laboulbenei, and of very extraordinary habits, the larva being aquatic, living in the canals of the sugar plantations in Cayenne, and feeding upon an aquatic plant. The hairy larva had all the form usual for the group, and breathed by means of small spiracles—a supply of air being apparently entangled in its hairs.

The cocoons were joined together in little masses floating on the surface of the water.

Mr. Butler remarked on a paper by Mr. J. V. Riley, in the 'Journal of the S. Louis Academy of Sciences,' in which he alluded to Apatura Lycaon, *Fab.*, and A. Herse, *Fab.*, as distinct species: but which he (Mr. Butler) believed to be closely allied to, if not identical with, Apatura Alicia, *Edwards*.

Mr. M'Lachlan read a letter that he had received from M. Ernest Olivier, stating that the collection of insects formed by his grandfather had been purchased some years after his death by MM. Chevrolat and Jousselin. A great part of the collection had been suffered to fall into decay; but recently a portion, comprising the Curculionidæ, Heteromera, Lamellicornes, Sternoxi, Chrysomelidæ, Clavicornes and Hydrocantharidæ had come into his possession, and he would be happy to show them to any English entomologist who might desire to examine any of the numerous types. Unfortunately the Carabidæ and Longicornes were almost entirely lost.

Papers read.

Mr. Smith communicated a paper on the Hymenopterous Genus Xylocopa; and Mr. D. Sharp a paper on the Pselaphidæ and Scydmænidæ of Japan, from the collections of Mr. George Lewis.

ANNUAL MEETING,

26th January, 1874.

Prof. Westwood, M.A., F.L.S., President, in the chair.

An Abstract of the Treasurer's Accounts for 1873 was read by Mr. Jenner Weir, one of the Auditors, showing a Balance of £150 10s. 3d. in favour of the Society.

The Secretary read the following—

Report of the Council for 1873.

In accordance with the Bye-Laws, the Council presents to the Society the following Report:—

During the year, eleven Members or Subscribers have been elected, whilst sixteen have been removed from the list by death or otherwise: the loss in our numbers is therefore five.

The volume of 'Transactions' for 1873 will contain eighteen memoirs, extending to 657 pages, exclusive of Proceedings, and illustrated by five

plates, one entirely and another partially coloured. The Society is indebted to Major Parry for the drawing and engraving of the plate illustrating his paper on Lucanoid Coleoptera. Six of the above papers, comprising 230 pages (one-third of the volume), are descriptive of the Coleoptera of the Japanese Archipelago, from the collections of Mr. George Lewis.

The statement of Receipts and Payments shows the following result:—

Receipts.		Payments.	
Contributions of Members.....	£208	Library	£ 4
Sale of Publications	76	Publications.....	226
Interest on Consols.....	5	Rent and Office Expenses	59
		Tea at Meetings	13
	£289		£302

Thus the expenditure has exceeded the receipts by about £13, which will be readily accounted for by the increased size of the volume of 'Transactions,' being the largest yet published by the Society in any one year. And, in addition to this, the Council have issued a fourth part of the 'General Catalogue of Insects Indigenous to the British Islands,' comprising the Hymenopterous group, Oxyura, by the Rev. T. A. Marshall. The cash balance of £15 6s. 1d. at the beginning of the year is reduced to £2 1s. 3d.

The necessity of increased accommodation for the Library, which has far outgrown that at present provided for it, as well as for a room for the meetings of the Society, has now become a matter for the anxious consideration of the Council. It is true that the Linnean Society has kindly renewed the permission for the members to meet in these rooms during the present session, but at the end of that time accommodation must be found elsewhere. An application has been forwarded to the Chief Commissioner of Works, with a view to ascertain whether the Society could be allowed to occupy apartments in Burlington House, and the Council have notified their intention of giving up the occupancy of their present rooms at 12, Bedford Row, at Midsummer next. It is hoped that before that time the question whether the Government will provide accommodation may be favourably decided; otherwise it will be for the consideration of the Council as to what further steps may be necessary.

26*th January*, 1874.

The following gentlemen were elected Members of Council for 1874:—Sir Sidney Smith Saunders, Messrs. W. C Boyd, Dunning, Grut, Meldola, Moore, M'Lachlan, F. Smith, Stainton, Stevens, Verrall, Jenner Weir and Professor Westwood.

The President read the following Address:—

THE PRESIDENT'S ADDRESS.

Gentlemen,

In addressing you on the present occasion I must be allowed, in the first place, to express the great regret which I have experienced, during the past year, from having been prevented by severe illness from attending several of the meetings of the Society. Those only who, like myself, have scarcely ever failed being present at our reunions since the first establishment of the Society, can fully appreciate such a forced absence from them; and I greatly fear that the same cause will continue to operate against my frequent presence on such occasions.

The Annual Report presented to you by the Council, and just read, will have made you acquainted with the satisfactory state of the Society, both in a financial and scientific point of view; and I cannot leave this chair without expressing the gratifying conviction which I entertain that our Society has become firmly established, and is recognized as one of the necessary conduits of knowledge. Our publications and the proceedings at our meetings have taught the world that Entomologists are somewhat more than butterfly catchers, and that the vast tribes of animals which constitute the materials of our study possess claims, both economical and scientific, to the attention not only of the professed naturalist, but also of the general public.

Although we have not had occasion, so far as I have learned, to mourn the loss of any of our more prominent fellow-workers in this country, several eminent naturalists and entomologists have passed away lately whose memory claims a short notice from me.

Dr. Kaup, of Darmstadt, was a distinguished Palæontologist, but he had made his name famous amongst us by an admirable memoir on the difficult group of Passalides, and by his description of many new species of the curious tribe of Phasmidæ.

George Ritter von Frauenfeld was one of the naturalists of the celebrated Novara Expedition of the Austrian Government; he

was a genuine lover of Nature in a wide extent, and was especially attached to the investigation of the habits of insects. I recollect on one of his visits to England he came to Oxford at a time when I happened to be absent for several hours; and on my return, I found that, instead of rambling over our fine old colleges and other academical establishments, he had taken a walk into the adjoining lanes, and had found some galls and mined leaves which greatly interested him.

Robert M'Andrew, F.R.S., died on the 22nd of June last, at the age of seventy-two years. Although especially devoted to Conchology, he had extensively collected the Crustacea during his various dredging expeditions.

Albany Hancock, who died on the 26th of October last, was also much attached to the British Crustacea, although his admirable researches were chiefly confined to other invertebrate groups.

We have also to regret the deaths of Dr. Louis J. R. Agassiz and Mr. Edward Blyth, both naturalists of distinguished eminence, but not especially entomologists, although the latter gentleman, previous to his residence in India, had made insects a portion of his general zoological studies. From the 'Athenæum' of Saturday last (January 24th) we learn that a few days before his death Prof. Agassiz completed a paper "On Evolution and Permanence of Type." This has been printed in the 'American Monthly,' and is well deserving attention: the author's views with regard to the Evolution hypothesis being well known, as especially stated in his 'Methods of Study in Natural History;' his 'Nomenclator Zoologicus,' and his bibliographical work published by the Ray Society, have been of great service to entomologists.

With great regret, we learn from this evening's newspapers that apparently reliable intelligence has been received of the death of Dr. Livingstone. The observations on Natural History, especially on the venomous Tsetse fly, published in his 'Missionary Travels in South Africa,' sufficiently show the interest which he took in Entomology, as do also several interesting insects which he had collected (including the singular Phyllomorpha Livingstonii, described by me in our Transactions), and which are now preserved in the Oxford Museum, to which he presented them during his visit to Dr. Daubeny (shortly before his departure to Africa), on which occasion he especially requested me to inform

him of the entomological subjects most worthy of his attention during his intended travels.

During the progress of this sheet through the press, we have received from Paris the sad news of the death of Félix-Edouard Guérin-Méneville, one of the most accomplished entomologists, a most admirable artist, and one of our foreign honorary members. Born in 1799, for fifty years he unceasingly contributed to the progress of our Science in all its various departments, his first memoir having appeared in 1823. His great work, the 'Iconographie du Règne Animal,' occupied fifteen years in its publication; and his 'Magasin de Zoologie,' commenced in 1831, still survives, being now published by M. E. Deyrolle.

Monsieur Brullé, Professor of Zoology at Dijon, was long attached to the Jardin des Plantes in Paris, and is well known for his many memoirs, published chiefly in the 'Annales' of the French Entomological Society, and especially for his fine work on the Insects of the Morea.

In last year's Address I informed you of the progress in Natural Science which had been made at Oxford during the few preceding years, and have now to add that, in consequence of the Report issued by the Royal Commission on Scientific Education, further steps have been taken in the same direction; several of the more recently appointed professors of different branches of Natural Science have been elected full Fellows of several of the Colleges, several readers and teachers of the same subjects have been appointed by different Colleges, and an official enquiry has been set on foot as to the steps which appear desirable to adopt for further advancing the progress of these sciences. My reply to this inquiry (addressed to the various Professors) bears so much upon our especial subject that I consider it advisable to make you acquainted with it.

"*To the Very Reverend the Vice-Chancellor.*

"Oxford, 27 November, 1873.

"Sir,

"In reply to the circular recently addressed to me concerning the Professorship of Zoology, I do not consider that the study of that branch of Biology can be properly pursued in the present constitution and distribution of the Professorships of Oxford.

"The development of Physical and especially Biological Science has been most rapid within the last twenty years, and the proper teaching of

Zoology requires—1st. A knowledge of all the leading types of animals, including their general structure, habits, geographical distribution, transformations, &c.; 2nd. Comparative Anatomy, especially of the Vertebrated groups; 3rd. Palæontology, as no modern work on Zoological Classification can be considered as complete in which the extinct species are not introduced into their proper situations in the zoological series; 4th. It has been urged, I think injudiciously, that the minute anatomy of the tissues, cells, &c., of animals (Histology) ought also to form a portion of the Zoological Professor's teaching.

"Mr. Hope's deed of donation and foundation of the Hope Professorship of Zoology directs that the duties of his Professor should be especially directed to the articulated animals; and in the Syllabus of Studies of the great Continental Universities, printed in the Report of the University Commission, it will be seen that a separate Professorship is assigned to this division of the Animal Kingdom, Dr. Gerstaecker at Berlin and M. Emile Blanchard at Paris being the Entomological Professors.

"The Keepership of the Hope Collections throughout the Museum was also imposed on the Hope Professor, and the enormous extent of his Collections (the Entomological portion as a whole being, in my opinion, only surpassed by the National Museums of London, Paris and Berlin) will always absorb a very large portion of the Professor's time, independent of professorial teaching.

"It would therefore, in my opinion, be desirable that an *Assistant Professor of Zoology* should be appointed, as well as *one of Comparative Anatomy*, with which Histology might be temporarily associated, if it should be thought desirable to detach it from Physiology. A *Readership in Palæontology* seems also advisable.

"I cannot conclude this letter without mentioning another subject which has long forced itself on my attention, namely the want of a *Professor or Reader in Natural Theology*, whose duty it should be to counteract the atheistical demoralization resulting from the unlimited teaching of Darwinism, in which Design in Creation, and even Creation itself, are openly or virtually denied or ignored.

"I am, Very Reverend Sir,

"Yours, &c.,

"J. O. Westwood."

The attempt which is now being extensively made to introduce the study of Natural Science, and especially Natural History, into the principal great schools throughout the country has been proved to work in a satisfactory manner at Marlborough College, and I have now before me the seventeenth half-yearly Report of the Natural History Society of that establishment, which was

founded in April, 1864. In this goodly part we find it stated that the entomological collection belonging to the Society has been considerably increased by donations, including one of Deilephila Livornica, "which was undoubtedly caught near Marlborough," whilst "a complete list of all the Lepidoptera known to occur within our district" extends to twenty-four pages, closely printed.

On this subject I may refer with much satisfaction to a pamphlet published by Everard F. Im Thurn, of Exeter College, Oxford, entitled 'Notes on a School Museum,' dated January 21, 1873, being an address to the Natural History Society of the above-mentioned College.

The establishment of new Societies of Entomologists, not only abroad but in various parts of our own country, is a very gratifying proof of the unfading interest taken in the subject in many new centres of scientific pursuits.

The Rules of Zoological Nomenclature have formed the subject of a pamphlet published by Dr. Sharp, in November last, with the title, 'The Object and Method of Zoological Nomenclature,' in which the author laments the constant changes in the names of even the most common insects, and the consequent increased disgust with which the science is regarded. Dr. Sharp insists that the name of an insect ought to be unalterable, and that it ought to serve only for nomenclature and not for classificational purposes; and he proposes to carry this out by having three names for each species, namely, the two names by which it was first described, and a third name, in a separate column, being that of the modern genus to which it is from time to time assigned, thus—

Scarabæus stercorarius, *Linn.*	Geotrupes, *Jek.*
Scarabæus sabulosus, *Linn.*	Trox, *Harold,*
Silpha scabra, *Linn.*	Trox, *Harold;*

the first two names to remain unchangeable, and the last to be supposed liable to change according to the views of any future writer. I can scarcely conceive that any one will feel disposed to adopt these views of Dr. Sharp, and yet they have been partially carried out by many writers. The great difficulty in the matter consists in the infinite number of the species of insects, the great majority of which are unknown to the world at large. The case

is, however, quite different with creatures of popular interest. Thus, in writing a popular work on Zoology, or in casually mentioning a well-known animal in a work of still more general character, we should employ only a single name, as, for instance, the horse, the giraffe, or the peacock, thus adopting the mononymic method; but if the object were less generally known, we should speak of the death's-head moth or the peacock butterfly, which, if we wished to apply the scientific names, we should call Sphinx Atropos or Papilio Io, one of the two names being unquestionably a classificational one; but if we speak of these two insects to a Lepidopterist we must be still more precise, and call them Acherontia Atropos and Vanessa Io; and this triple set of names, Sphinx (Acherontia) Atropos, is precisely what has been long adopted by many writers. "It is," as was well observed by the late Robert Brown, "analogous to the method followed by the Romans in the construction of the names of persons, by which not only the original family, but the particular branch of that family to which the individual belonged, was expressed. Thus the generic name corresponds with the nomen (Cornelius), the name of the section with the cognomen (Scipio), and that of the species with the prænomen (Publius)."

Under the title 'On the Origin and Metamorphoses of Insects,' Sir John Lubbock has published a volume containing a very carefully compiled and arranged view of the different kinds of transformations undergone by insects from their earliest embryonic state to their adult form, illustrated by many figures, with a view to tracing the original type of form from which all the different variations have been derived, and which is assumed to be found in the genus Campodea, a minute animal allied to the Lepismidæ, first described by myself in the Transactions of our Society. Sir John Lubbock sums up his views thus:—"It seems to me evident that while the form of any given larva depends to a certain extent on the group of insects to which it belongs, it is also greatly influenced by the external conditions to which it is subjected; that it is a function of the life which the larva leads and of the group to which it belongs." No one, I think, can object to the first of the above propositions. Whilst admiring the excellent manner in which Sir John Lubbock, like Mr. Darwin, has worked out his facts, I however, for one, cannot adopt an opinion that the form of the larva of any given species

of insect was modified by existing circumstances, but that, on the contrary, it was expressly created in a form most fitted for performing its allotted task in the great work of the Creation. In like manner, I am unable to adopt the theory of the gradual evolution of the varied forms of larva life from a single prototype—an opinion as difficult, however, to disprove as it is impossible to prove.

I may here call attention to a Teleological memoir by the Rev. T. R. Stebbing in the 'Quarterly Journal of Science.'

During the past year two very important collections have been dispersed; that of Mr. Thomas Norris, of Redvales, near Manchester, had been formed at unlimited expense, and contained many very fine and rare insects, amongst which was the Lamia Norrisii, figured and described by myself in the Transactions of our Society. This grand and still unique insect has passed into the collection of Count Mniszech, of Paris. The other collection, that of Mr. W. Wilson Saunders, was far more important and widely known, and was especially valuable as containing the greater portion of the species collected by Mr. Wallace in the Malayan Archipelago. By the liberality of Mrs. Hope, the Orthoptera and Heterocerous Lepidoptera (containing the whole of the types described by Mr. Walker in the Proceedings of the Linnean Society) have been added to the Hopeian Collections at Oxford. The constant liberality and kindness shown by Mr. Saunders on all occasions, both to the Entomological Society and its individual members, cannot but inspire great regret at the necessity for the dispersion of his noble collection.

An interesting memoir on the organ of the tracheæ in various aquatic insects, especially the Perlidæ, by Herr Gerstaecker, is given in the 'Sitzungs-Bericht' of the Natural History Society of Berlin of the 21st October last. The remarkable genus Pteronarcys of Newman has especially led to these remarks by Dr. Gerstaecker, which possess much interest in connection with the question of the real homologies of the abnormal appendages of several other insects; and here I may refer to the very interesting genus Scolopendrella, which has on the under side of each segment a pair of appendages closely resembling those of the Lepismidæ,—"a fact," as Sir John Lubbock shrewdly remarks, "which suggests doubts whether the subabdominal appendages of that group really represent the legs of Myriapoda."—Mon. Thysan. p. 57.

The accounts which have from time to time been published of the progress of the exploring vessel 'Challenger' have made us acquainted with the great success which has so far attended the expedition. Several interesting articles have appeared in 'Nature,' giving a detailed account of its proceedings, in which we find accounts of some very remarkable Crustacea, one of which, taken at a very great depth, exhibits a considerable resemblance to the fossil genus Eryon. Another very curious form, being the largest Amphipod hitherto discovered, has furnished the subject of a memoir transmitted to the Royal Society. I may, however, remark that this animal was long ago described and figured by Guérin-Méneville, under the name of Cystosoma, and that the type specimen was obtained by me from its describer, and is preserved in the Hopeian Collection at Oxford.

Mr. Charles V. Riley, the State Entomologist of Missouri, has issued his 'Fifth Annual Report on the Noxious, Beneficial and other Insects' of that State (Jefferson City, 1873, pp. 1—130). I have not yet seen this volume, but it contains an article on stinging larvæ, of which Mr. Riley is acquainted with fifteen distinct American species possessing urticating powers, which in every instance are exerted mechanically, and not produced from actual poison. Another chapter contains a series of instructions to young entomologists on the modes of collecting and preserving insects.

The agency of insects in the impregnation of flowers is a subject of growing interest. A series of papers on this subject has recently appeared in the pages of 'Nature.'

Mr. Riley has also, during the past year, made us acquainted with the interesting circumstances attending the impregnation of the flowers of the genus Yucca by a small moth of a very remarkable structure, expressly fitted for the purpose, and without the aid of which the plant could not have been perpetuated.

The subject of the injurious attacks of the Phylloxera upon vines continues to attract the attention of many observers in France, and has been repeatedly brought under the notice of the French Academie des Sciences as well as the Entomological Society of France during the past year.

A memoir by S. E. Peal, Esq., published during the last year at Calcutta (reprinted from the 'Journal of the Agricultural and Horticultural Society of India,' vol. iv.), with seven plates, has

made us acquainted with a new and very destructive enemy to the tea-plant in Assam. It is a Heteropterous insect, belonging to the family Capsidæ, and remarkable for having a slender, erect horn arising from the scutellum: it is similar in its operations to the Aphides, but is very active, thus resembling the species of field-bug which in this country is very injurious to the blooms of chrysanthemums in the autumn, by thrusting its proboscis into the young flowers and leaflets.

An admirable volume, on the 'Natural History of the Grain-storing Ants and the Trap-door Spiders of the Northern shores of the Mediterranean,' has been published by Mr. Moggridge, who has kindly forwarded to the Oxford Museum a series of specimens of the nests of the different species of spiders observed by him.

Mr. Belt, who has contributed so much to our knowledge of the insects of Nicaragua, has recently published his observations on the Natural History of that country, in a volume entitled 'The Naturalist in Nicaragua: a Narrative of a Residence at the Gold Mines of Chontales; Journeys in the Savannahs and Forests, with Observations on Animals and Plants, in reference to the Theory of Evolution of Living Forms' (8vo. London, Murray, 1874). This title will sufficiently show the bias of the mind of the writer, whose observations on the many instances of protective imitation which he met with are full of interest.

The account of the voyage of the 'Curacoa,' by Mr. Brenchley, contains descriptions of various new Lepidoptera by Mr. F. Smith, and of some new Lepidoptera by Mr. Butler.

The larval forms of several interesting genera of Coleoptera, namely, Elmis, Psephenus, *Hald.* (Eurypalpus, *Leconte*, Fluvicola, *De Kay*), Helodes and Cyphon, have been carefully elaborated by Dr. Rolph (Wiegmann, Archiv. f. Naturg. 40th Jahrg. 1st Heft, 1874), and are illustrated by a very full plate.

We have also to notice an admirable memoir, by Dr. Hagen, on all the known larvæ of various species of Ascalaphi and Myrmeleons, with additions by Mr. M'Lachlan.

It is with much regret that I learn that the excellent 'Entomologist's Annual,' which Mr. Stainton has with great liberality continued to publish for many years, is to be discontinued after the present year. I trust some plan may be adopted for supplying its place, and publishing summaries of the new additions to our

Fauna, similar to the lists which M. Deyrolle publishes from time to time in his 'Petites Nouvelles.' Surely such an annual or half-yearly summary would not be out of place in our own Transactions, or in the pages of the 'Entomologist's Monthly Magazine.' For many years I regularly posted up our additions, in my copy of Stephens' Catalogue, and can testify to the great benefit of such summaries.

The vast number of short memoirs published upon restricted groups or species, in the Transactions of the various Entomological Societies and in the many Zoological or Entomological periodicals, renders it impossible for me to give, in an address like the present, more than a sketch of the most important ones which have appeared during the past year. It is, however, to me a source of increasing regret that the number of entomologists, who devote their attention to the whole subject, is becoming gradually smaller, whilst specialists, whose general views of the subject must necessarily be limited, are so greatly on the increase.

After an interval of delay we again welcome the appearance of a new part of the Transactions of the American Entomological Society (vol. iv. number 4, completing the volume), containing papers—by Mr. Aug. R. Grote, "On North American Noctuidæ;" Dr. Horne, "On the Bruchidæ of the United States" (fifty-one species, more than half of which are new); Mr. W. H. Edwards, "On Six new Butterflies found within the United States;" Mr. G. R. Crotch (who has accepted a situation in the Museum of Cambridge, U.S.), "A Synopsis of the Erotylidæ of Boreal America," "A Synopsis of the Endomychidæ of the United States," "A Revision of the Coccinellidæ of the United States," and "A Revision of the Dytiscidæ of the United States;"* and Mr. Grote, "A Description of a New Species of Tortrix," and "A Revision of the Lepidopterous Articles, published by himself and the lamented Mr. Coleman T. Robinson in former volumes of the Transactions."

I have the pleasure on the present occasion to offer to the Society the first part of my 'Thesaurus Entomologicus Oxoniensis'

* Mr. Crotch notices the interesting fact that Dytiscus lapponicus, the most Northern European species, does not "pass over" to North America, as well as the prevalence of smooth females in the same genus; "in England, of six species, only one has a smooth female, and in America only three species have sulcate females, and those have also smooth forms."

(a number of copies of which have been in the publisher's hands for the last two months). The work is to be completed in four parts, with forty plates.

Dr. Barrande still continues his "Researches on the Silurian Fossils of the Centre of Bohemia," and has discovered that, whilst in the Cambrian formation not more than twenty-eight animals have been discovered, in the Primordial Silurian system not fewer than three hundred and sixty-six have been found, of which two hundred and fifty-two are species of Trilobites, ten of Ostracoda, and only two of other Crustacea, distributed in that system of rocks, as follows:—

Europe.						North America.							
Number of Genera.	Classes.	Bohemia.	Spain.	Scandinavia.	England.	Newfoundland.	Canada.	New Brunswick.	New York.	Massachussetts.	Upper Mississippi.	Texas.	Georgia.
28	Trilobites . .	27	9	77	61	9	9	18	6	1	37	8	1
2	Ostracoda . .	–	1	5	4	–	–	–	–	–	–	–	–
2	Other Crustacea	–	–	–	1	–	–	–	–	–	1	–	–

An important memoir, by G. O. Sars, published in the Transactions of the Royal Swedish Academy (Kongl. Svenska Vetensk. Akad. Handl. vol. ix.), has only recently reached me. It is devoted to the species of the very interesting Crustaceous group, Cumaceæ, allied to the Mysidæ, a group which has attracted the attention of some of the most learned of recent Crustaceologists, who have greatly differed in their opinions of the homologies of the parts of the mouth and anterior pairs of legs; thus the organs which Kroyer and Spence Bate regard as the first, second and third pairs of true legs, were considered by Goodsir as the second, third and fourth pairs of legs, by Van Beneden as the second and third pairs of gnathopods and first pair of legs, and by Anton Dohrn as the second pair of gnathopods and the first and second pairs of legs. By Sars, the three short terminal pairs of thoracic

appendages are considered as the third, fourth and fifth pairs of legs, the two preceding pairs of elongated bifid organs being his first and second pairs of legs. The anatomy of the group, as well as the sexual differences, are admirably made out and illustrated in a series of twenty elaborate 4to plates. In the genus Diastylis, *Say* (Cuma, *Kroyer;* Alauna, *Goodsir*), the author has added six species to the thirteen already described by previous writers; to the genus Leucon, one new species is added to the five already known; and to the genus Eudorella, *Norman* (Eudora, *Sp. Bate*), three are added to the four previously described.

We are glad to welcome a new English worker in the Crustacea, the Rev. Thomas R. R. Stebbing having published the description of a new Sphæromid from Australia, and two new species of Arcturus from South Africa, in the 'Annals of Natural History' for August last. It is to be hoped that this gentleman, from his residence on our South coast, may be able to contribute to our knowledge of the small but much neglected species of Crustacea.

We are indebted to the Rev. O. P. Cambridge for his unwearied labours in making us acquainted with the species of spiders (especially the exotic ones). During the past year he has described a number of new and very curious species from Ceylon, forwarded by Mr. Thwaites, and from St. Helena, captured by Mr. Melliss, in the Proceedings of the Zoological Society, and various new European species in the Journal of the Linnean Society.

Dr. Koch's work, 'Die Arachniden Australiens,' has now reached the ninth Lieferung, 4to, Nuremberg, 1873. The figures are, it is to be regretted, by no means sufficiently characteristic.

We are indebted to Mr. A. G. Butler for a series of articles on various interesting, although much neglected, groups of wingless insects, namely, the Myriopodous Glomeridæ, Zephronia, and Sphærotherium; the Arachnidous Gasteracantha, and Achrosoma; and the remarkable genera Phrynus, Gonyleptes, Galeodes, and Thelyphonus: these have been published in our own Transactions, in the Proceedings of the Zoological Society, and in the Annals of Natural History. The systematic arrangement and morphology, with especial reference to the structure of the mouth-organs and legs of the Phalangiidæ, have formed the subject of an elaborate memoir by William Sorensen, published

in the eighth volume of the third series of the 'Naturhistorisk Tidsskrift' for 1873. To the old genera Gonyleptes, Opilio, and Trogulus, are added three new genera, Anelasma, Amopaum, and Dicranolasma.

The very remarkable structure and singular sexual differences in one of the parasitic Acaridæ, at various stages of its existence, have been described and admirably figured in great detail, by Dr. Ehlers, of Erlangen, in 'Siebold und Kolliker Zeitschr. f. Wissensch.' (Zool. vol. xxiii.). The species belong to the Sarcoptidæ, and are named Dermatoryctes mutans and fossor.

The most important entomological work which has appeared during the past year is Sir John Lubbock's 'Monograph of the Collembola and Thysanura,' published by the Ray Society. The latter of these two terms is confined to the Lepismidæ, whilst the Poduridæ are regarded as of sufficient rank to be considered as a distinct order, "more nearly allied to the Insecta than to the Crustacea or Arachnida, although they cannot in the strictest sense be regarded as true insects," thus negativing their relation with the Orthoptera and Neuroptera.* The structure of the mouth of the Poduridæ (Collembola) is carefully examined (as indeed it had already been in the author's four memoirs, published in the Transactions of the Linnean Society), from which the author assumes that their cibarian characters are intermediate between those of the Mandibulata and Haustellata. The volume is divisible into two portions: an Introduction of one hundred pages, containing a review of the previous literature of the group;† the classification and general description of the animals composing the two groups; and an enquiry into "The importance of the Collembola and Thysanura in relation to the Evolution of the Insecta." These remarks, extending to fifteen pages, will be read with great interest, especially by believers in the Darwinian theory, which I need hardly say I am not able to adopt. The second portion of the work, extending to one hundred and fifty pages, contains the description and technical characters of the

* Sir John Lubbock's views of their relations with the Myriapoda and Arachnida are rendered doubtful by a strange typographical blunder in p. 38.

† The complaint that only two British species of Collembola had been casually mentioned in English works, namely, Podura plumbea and Smynthius fuscus, in Samouelle's Compendium, might have been lessened, had the author been aware of my articles on several species in the 'Gardener's Chronicle.'

genera and species,* with an essay on the scales of these animals, by Joseph Beck, the microscopist. The work is illustrated with not fewer than seventy-seven plates. I trust I may here be allowed to express my admiration of the zeal and skill which has enabled a gentleman—occupied as the author is as a London banker of the first rank, a member of parliament, and a profound archæologist—to produce such a book as the one under notice, upon a group of small and obscure animals, hitherto almost entirely neglected by our English entomologists.

The structure of the mouth of the Poduridæ, notwithstanding the researches both of Sir John Lubbock and Dr. Meinert of Copenhagen, still requires investigation, for although the intimate relation of these insects with the Lepismidæ (which have the mouth formed on the true type of the mandibulated insects, that is, with one pair of mandibles and one pair of maxillæ) is clearly shown by the structure of the mandibles; yet the Poduridæ are described by Sir John Lubbock as possessing a second pair of maxillæ, which would indicate an additional head-segment, and would, as it seems to me, remove the Poduridæ from the great group of insects with a single pair of maxillæ, approximating them to those Articulata which have several pairs of under-jaws. Dr. Meinert's opinion, that this second pair of foot-jaws are maxillary palpi, obviates this great difficulty.

The great additions to our knowledge of the Coleoptera of Japan, afforded by the collection made by Mr. Lewis, have formed the subjects of various communications made to our Society by different members who have especially studied the different families.

The indefatigable veteran M. Mulsant has given us a new and enlarged edition, in the form of a thick 8vo volume, of his work upon the Lamellicorn beetles of France.

Mr. Frederick Bates has published various memoirs on new genera and species of Heteromerous beetles; whilst his brother, Mr. H. W. Bates, has continued his memoirs on various species of Longicorn beetles.

Dr. Mohnike has given us a revision of the Cetoniidæ of the Philippine Islands in 'Wiegmann's Archives' for the past year.

* I notice that the Podura hyperborea of Bohemann is twice inserted as a Podura and an Achorutes: also that Savigny's admirable figures in the great work on Egypt, and Nicolet's in Gay's work on Chili, have been overlooked by Sir J. Lubbock.

A memoir "On the Genera of Cossonidæ," by T. Vernon Wollaston, M.A., F.L.S., has appeared in our Transactions, and is another example of the minute care which its author bestows upon every group which he takes in hand. The number of genera here elaborated amounts to one hundred and twenty-two. I cannot, however, perceive the advantage of giving the generic tabulation, the generic characters, the detailed observations on the genera, and the descriptions of the species contained in these genera, in four different portions of the memoir, thereby entailing so much extra trouble in bringing all that relates to each genus under one point of view.

Under the title 'Endomycici recitati,' the Rev. H. S. Gorham has published a catalogue of the family Endomychidæ (Eumorphidæ), with descriptions of thirty-seven new species, making a total of three hundred and two described species. The group is divided into the following so-called families:—

1. Eumorphidæ.
2. Corynomalidæ.
3. Lycoperdinidæ.
4. Epipocidæ.
5. Palæomorphidæ.
6. Endomycidæ.
7. Leiestidæ.
8. Paussöideidæ.
9. Myceteidæ.

Seven of these groups are named, as usual, after the leading genus in each; and it is to be regretted that this uniformity was not maintained throughout, since the eighth is named from a resemblance between the antennæ of its only genus Trochoideus and those of some of the Paussidæ, and the fifth from an idea entertained by the author that the Stenotarsi are the most ancient of the insects contained in the entire group. I protest against any such vague notions being concentrated into family or other names. It would also have added greatly to the utility of the work if the author had given the usual references to the works where the different species in his Catalogue had been described. How, for instance, is the student to trace out of the multitudinous writings of Mulsant where the description of Polymus, *Muls.*, nigricornis, *Muls.*, is to be found? We should not forget that whilst, *Ars* (*entomologica*) *long*(*issim*)*a, vita brevis est.*

The steady investigation of the difficult and very numerous species of dragonflies, by the Baron Edm. de Selys-Longchamps, has brought up our knowledge of the section Gomphines to two

hundred species, many additions being enumerated and described in "Troisièmes Additions au Synopsis des Gomphines," in the Bulletin of the Royal Academy of Belgium, June, 1873, and "Appendices aux Troisièmes Additions," November, 1873, the number being swelled by various new species in the Museums of London and Oxford, recently visited by the author.

Dr. Stål, of Stockholm, continues his laborious researches on the Orthoptera, by the publication of a 'Recensio Orthopterorum: Revue Critique des Orthoptères décrits par Linné, De Geer et Thunberg' (Part 1, 8vo, pp. 154). The first fascicle is devoted to the family of the true locusts (*Locustidæ* of English authors, *Acridiodea* of Burmeister), and which are divided into the families Proscopidæ, Mastacidæ, Phymatidæ, Pamphagidæ, Acridiidæ, Truxalidæ, Œdipodidæ, Pneumoridæ, Chorœtypidæ, Cœloptern-idæ and Tettigidæ. A great number of new genera are established, to which are ascribed not only the species described by the three Swedish authors named in the title, but also those of more recent writers. The recognition of the former species, in consequence of the typical individuals being still preserved in the Museums of Stockholm and Upsal, is especially valuable to the Orthopterist.

Mr. Wood Mason has published the descriptions of various new species of Phasmidæ, and has been able to determine the sexual identity of various species which had hitherto been regarded not only as distinct, but as belonging to different genera.

The Rev. T. A. Marshall has furnished our Society with two parts of the Catalogue of British Insects, devoted to the Ichneumonides adsciti, Chrysididæ, and Oxyura, showing an amount of labour which the loss of his collection by shipwreck has not damped.

The commencement of a memoir on the Mutillidæ of South America, by Dr. Gerstaecker, appears in the first part of the 40th jahrg. (volume) of 'Wiegmann's Archives,' 1874; about one hundred and twenty species are enumerated in this first part of the memoir; and Mr. F. Smith has described a great number of exotic fossorial Hymenoptera, during the past year, in the pages of the 'Annals of Natural History.'

The investigation of our British Hemiptera and Homoptera has been continued by Messrs. Douglas and Scott, in the 'Ento-

mologist's Monthly Magazine,' in which work also Dr. F. Buchanan White has published a revision of the species of the very difficult genus Corixa, and has described a curious structure in the male insects, hitherto entirely overlooked, but which he thinks forms portion of the genital armature, situated on the posterior margin of the upper side of the sixth segment of the abdomen, and consisting of a chitinous plate attached to a short pedicle, and provided with from three to sixteen rows of closely-set teeth resembling the teeth of a comb: to this organ he has applied the name of "strigil:" it differs in almost every species, and will doubtless prove of great value in determining the species.

The admirable works of Mr. Hewitson on Exotic Butterflies and on the beautiful group of Lycænidæ still continue to appear with due regularity; as do also those of Mr. Butler, and Mr. Edwards on the Butterflies of North America.

Mr. Ward has also published the first part of a work entitled 'African Lepidoptera, being Descriptions of New Species.' 4to. Longmans, 1873, with six excellent plates of butterflies.

Mr. Hermann Strecker has also issued seven parts of a new work entitled 'Lepidoptera, Rhopalocera and Heterocera, Indigenous and Exotic,' with very full coloured plates, containing figures of (p. 1) Saturnia Gloveri, (pp. 2, 4 and 6) species of Papilio and Pieris, &c., (pp. 3 and 5) many species of Catocala, (p. 7) species of Smerinthus (fifteen figures).

Mr. Herbert Druce has given us a list of the Butterflies of Borneo, with descriptions of various new species, in the Proceedings of the Zoological Society; in which work a remarkable new genus of Papilionidæ (allied to the genus Sericinus, first described by me in the Transactions of our Society), from the South-Eastern Himalayas, has been described and figured by Mr. Atkinson under the name of Bhutanitis Lidderdali.

Various new species of Morpho have been figured by M. Deyrolle, in the 'Magasin de Zoologie,' in which Dr. Burmeister has also contributed excellent descriptions and figures of the larvæ and pupæ of several species of the same genus.

We have still to regret the non-accomplishment of the reasonable hopes which we had entertained that our Government would have thought fit—whilst providing several of the older and more wealthy Scientific Societies with fitting places for holding their meetings, as well as their libraries and collections—to extend a

helping hand to the smaller Societies, like our own, which have been doing good work in Science, although often struggling for existence. This has not been done; and after the present season—during which the Linnean Society has been kind enough to continue to allow us to meet (as for several years past) in their rooms in Burlington House—it will be necessary for us to provide ourselves with a new meeting-room, and which it may probably be considered desirable to have, in connexion with our library, in Bedford Row, where it has so long been, or elsewhere if necessary.

I cannot leave this chair without offering a few words of advice to the younger members of our Society. Entomology is a Science, not a pastime. The objects of our studies are not play-things; they are amongst the most elaborate of the works of an Almighty Designer,—"The hand that made them is divine." As such they are worthy of our most careful study and research, which are capable of far wider extension than might at first sight be imagined. To study insects properly it is necessary that the STRUCTURE of the object under notice should be thoroughly, not superficially, examined, not only externally, but internally. Its HABITS also should be carefully studied, especially with reference to the corresponding peculiarities which may be noticed in its organization; the various changes it undergoes, from its earliest appearance in the embryonic state, through its various TRANSFORMATIONS; its relations to other existing species; whether those close structural resemblances which have been termed AFFINITIES, or those wider or more general relations or points of resemblance which have been termed ANALOGIES, and to some of which the ill-chosen name of mimicry has more recently been applied; the ECONOMICAL USES of the species, whether beneficial or obnoxious to man or other objects; the SEXUAL DISTINCTIONS, more especially the amount of variation in the external secondary sexual characters, such as difference of size, colour, texture, or appendages; the amount of VARIATION observable in the individuals of which the species are composed, especially with the view of determining how far these variations are hereditary, constituting more or less distinct local races; the GEOGRAPHICAL RANGE of the individuals of which the species consist, that is, the DISTRIBUTION of each IN SPACE; the relationship of the species with extinct individuals, either of the same or

closely-allied species, tracing its DURATION IN TIME; the SYSTEMATIC CLASSIFICATION, NOMENCLATURE, and SYNONYMY, of the species, both generic and specific, and its BIBLIOGRAPHICAL HISTORY, tracing it through the various authors who have treated on it; lastly, the relationships of the species with Nature in general, the weight of each in the great scale of the universe, and the effect of each in the mighty whole, which St. Pierre has so well termed the HARMONY OF NATURE. He, and he only, who will look at an insect or family, or order of insects, from these varied points of view; he who will not rest contented with the possession of a specimen, especially if it be a rare one, or with the observation of a single fact or two in its economy, or with its name and supposed place in the system, but will take such a wide range of vision as I have above sketched; he only is worthy of the name of an Entomologist.

Abstract of the Treasurer's Accounts for 1873.

Receipts.	£	s.	d.	Payments.	£	s.	d.
By Balance in hand 1st Jan. 1873	15	6	1	To Rent, Librarian and Office Expenses	59	14	0
„ Arrears of Subscriptions..	28	7	0	„ Printing	200	0	3
„ Subscriptions for 1873 ..	154	7	0	„ Plates, Engraving, Colouring, &c.	26	1	4
„ Five Admission Fees	10	10	0	„ Books purchased	3	14	6
„ Tea Subscriptions	14	7	6	„ Tea, &c.—Twelve meetings	12	17	0
„ Sale of Publications	76	1	9	„ Balance in Treasurer's hands	2	1	3
„ Dividend on £181 18s. 5d. Three-per-Cent. Cons.	5	9	0				
	£304	8	4		£304	8	4

Liabilities and Assets of the Society.

Liabilities.	£	s.	d.	Assets.	£	s.	d.
To Loan from Mr. Dunning..	45	0	0	By Arrears of Subscriptions, Good .....(say)	26	5	0
				„ Cost of £181 18s. 5d. 3-per-Cent. Consols ..	167	4	0
				„ Cash Balance in hand ..	2	1	3
	£45	0	0		£195	10	3
				Less Liabilities	45	0	0
					£150	10	3

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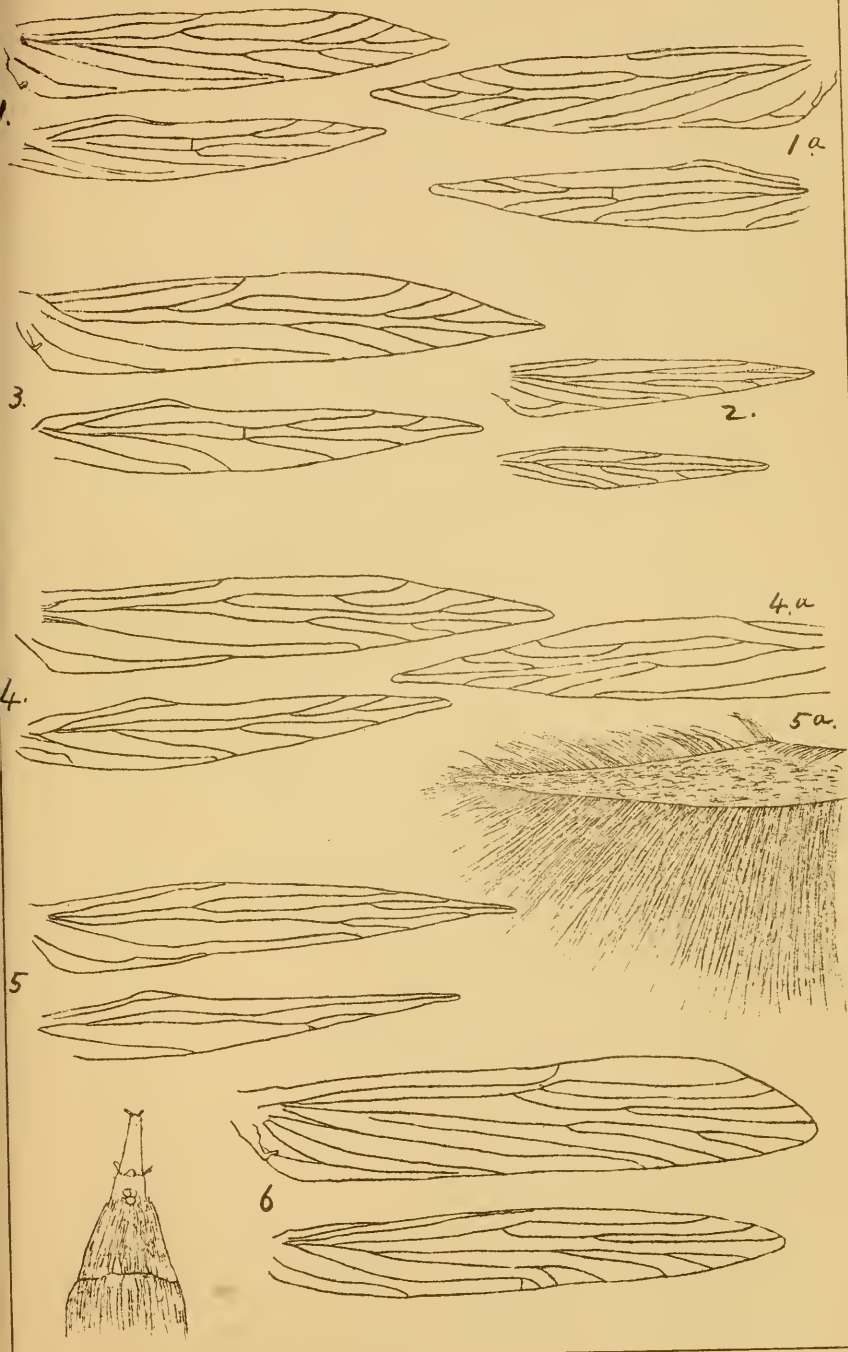

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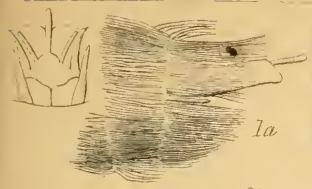
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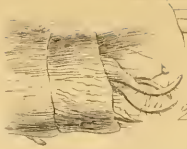
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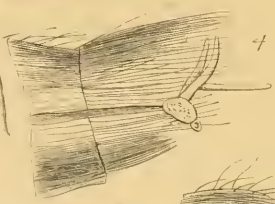
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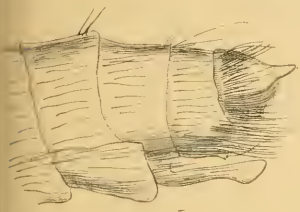
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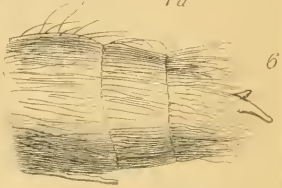
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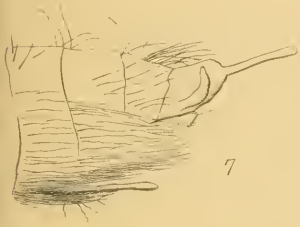
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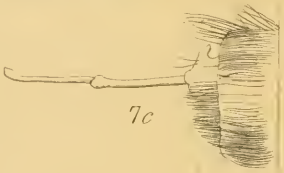
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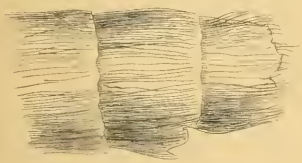
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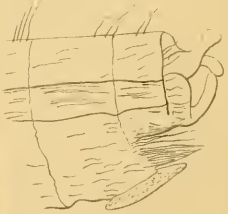
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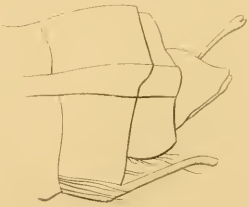
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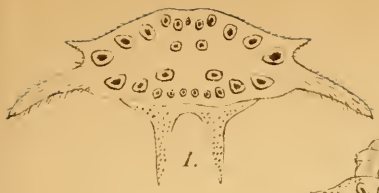
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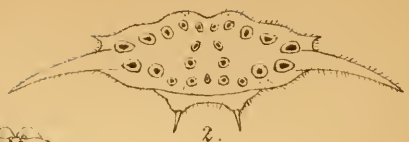
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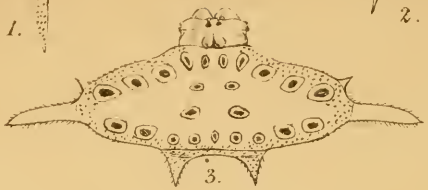
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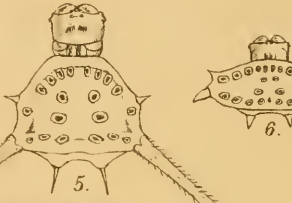
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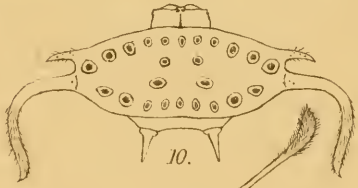
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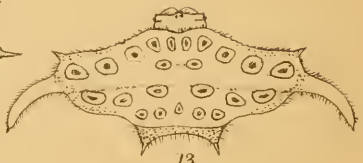
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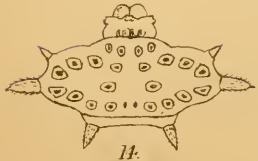
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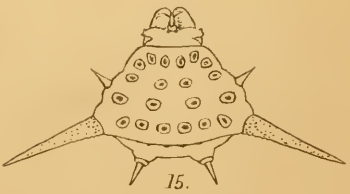
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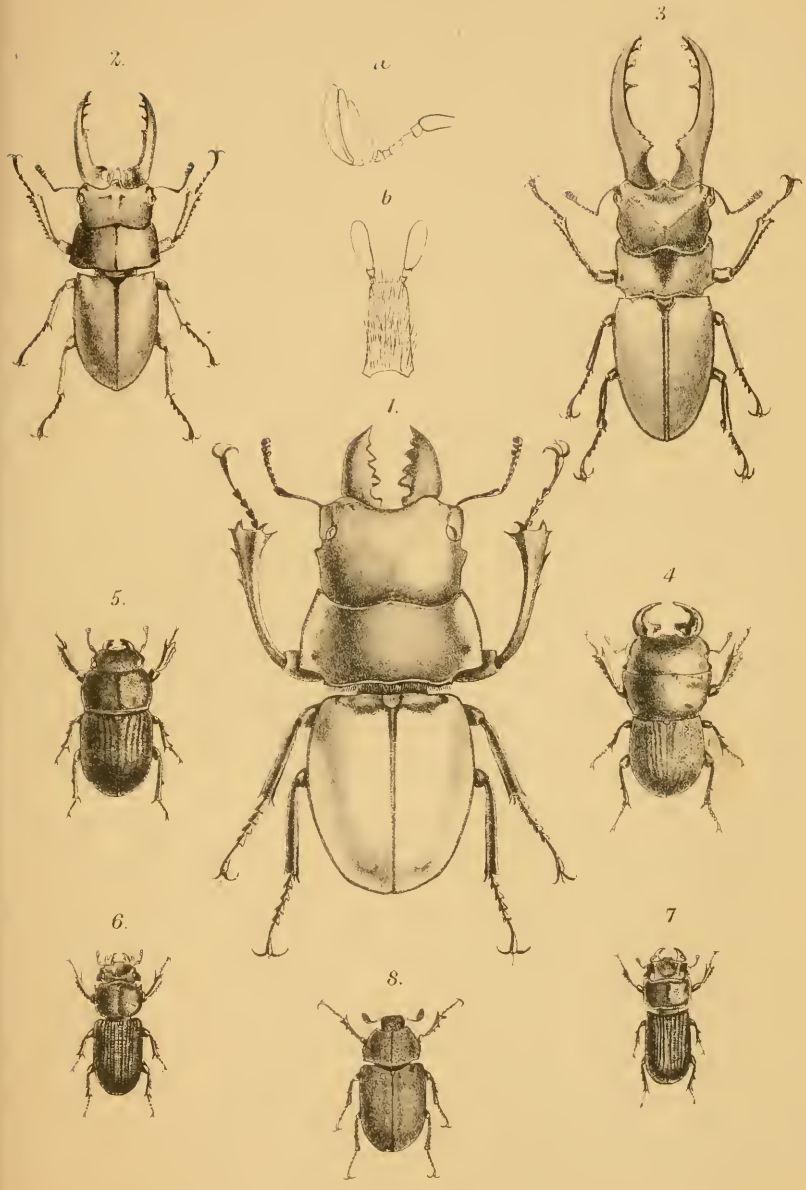

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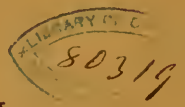

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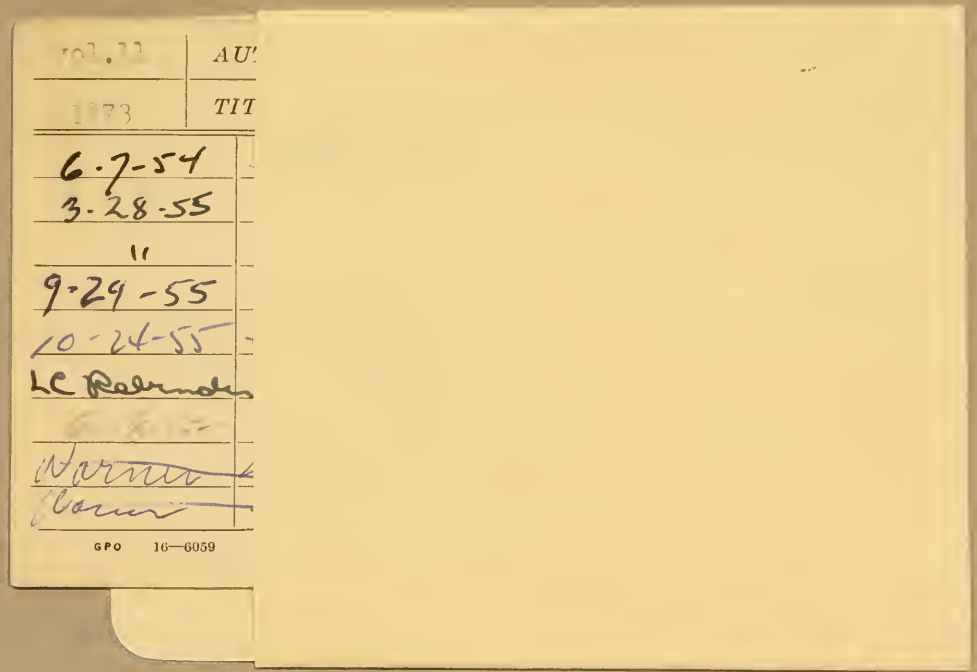

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